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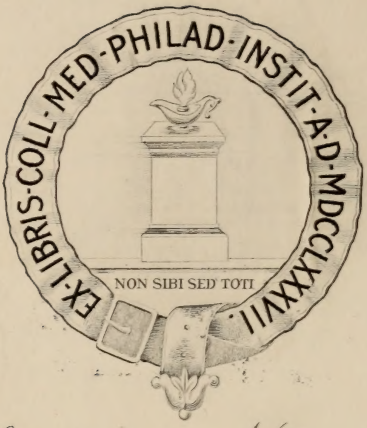


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# SUMMARY

OF THE

# TRANSACTIONS

OF THE

# COLLEGE OF PHYSICIANS

OF

# PHILADELPHIA.

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VOL. IV.—NEW SERIES.

FROM FEBRUARY, 1863, TO MAY, 1874, INCLUSIVE.

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1874.

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# COLLEGE OF PHYSICIANS OF PHILADELPHIA.

## 1874.

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18863

# SUMMARY OF THE TRANSACTIONS

OF THE

# COLLEGE OF PHYSICIANS OF PHILADELPHIA.

FROM FEBRUARY 4, TO APRIL 1, 1863, INCLUSIVE.

1863. *Feb.* 4. *Report on Meteorology and Epidemics for* 1862.—Dr. Wilson Jewell read the following report:—

In offering my Annual Report on the Meteorology and Epidemics of our city for 1862, or in other words, on its hygienic condition and relative mortality, I would acknowledge our indebtedness to a beneficent Providence, for the good degree of health with which we have been favoured throughout the year.

Meteorological Record.—The accompanying abstract of meteorological observations is furnished as usual by Prof. J. A. Kirkpatrick, A. M. His observations are made for the Smithsonian Institution. He has also added a comparative table of atmospheric phenomena for the last eleven years, for Philadelphia.

The mean temperature of the year 1862 was 53.58°, and stands one and one-eighth of a degree below that of 1861, and seven-tenths above that for eleven years.

The maximum temperature (95½°) occurred on the 7th day of July. The minimum temperature (8°) was on the 21st of December. The range of the temperature for the year was 87½°.

The warmest day of the year was August 9th, when the mean of the thermometer stood 87.67°. The coldest day was December 20th, when the mean for the day was 15.83°.

The maximum pressure of the atmosphere (30.555 inches) occurred on Nov. 16th; the minimum (29.216 inches) was on February 24th. The mean of the barometer for the year was 29.846 inches, which was a fraction lower than for 1861, and for the average of eleven years.

The force of vapour was less than for 1861, and for the average of eleven years.

The relative humidity of the atmosphere was greater than for 1861, but less than the average for eleven years.

The amount of rain that fell was nearly an inch more than in 1861, 45.656 inches, but three-quarters of an inch less than the average for eleven years.

It rained or snowed 134 days during the year. The month of June furnished the greatest amount of rain, 6.592 inches, when it rained 15 days. August the least, 1.455 inches, and for only 7 days.

*General Abstract of Meteorological Observations, made at Philadelphia, Pa., during the year* 1862.

By JAMES A. KIRKPATRICK, A. M., Prof. of Civil Engineering in the Central High School of Philadelphia.

(Barometer sixty feet above mean tide in the Delaware River.)

| 1862. | THERMOMETER. | | | | | | | | | BAROMETER REDUCED TO 32° F. But not corrected for altitude. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | RANGE. | | Mean of daily oscillations. | MEANS. | | | | | | RANGE. | | MEANS. | | | |
| MONTHS. | Max. | Min. | Monthly. | Mean daily. | | 7 A. M. | 2 P. M. | 9 P. M. | Average. | Max. | Min. | Monthly. | Mean daily. | 7 A. M. | 2 P. M. | 9 P. M. | Average. |
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | inches. | inches. | inches. | inches. | inches. | inches. | inches. | inches. |
| January . . . | 54 | 10 | 44 | 5.04 | 10.21 | 29.36 | 34.47 | 31.97 | 31.93 | 30.408 | 29.325 | 1.083 | .261 | 29.942 | 29.894 | 29.931 | 29.922 |
| February . . . | 52 | 16 | 36 | 5.55 | 10.89 | 28.36 | 36.00 | 31.64 | 32.00 | 30.322 | 29.216 | 1.106 | .225 | 29.939 | 29.891 | 29.922 | 29.917 |
| March . . . . | 56 | 22 | 34 | 3.95 | 14.44 | 34.24 | 44.21 | 39.18 | 39.21 | 30.173 | 29.276 | .897 | .173 | 29.804 | 29.747 | 29.795 | 29.782 |
| April . . . . . | 82 | 28 | 54 | 5.89 | 17.87 | 44.57 | 55.23 | 48.28 | 49.36 | 30.321 | 29.422 | .899 | .146 | 30.025 | 29.979 | 29.994 | 29.999 |
| May . . . . . | 85 | 40 | 45 | 5.77 | 19.81 | 57.85 | 70.08 | 61.32 | 63.08 | 30.058 | 29.518 | .540 | .124 | 29.785 | 29.740 | 29.760 | 29.762 |
| June . . . . . | 89 | 47 | 42 | 5.34 | 17.60 | 64.57 | 74.72 | 66.75 | 68.68 | 30.146 | 29.375 | .771 | .123 | 29.738 | 29.706 | 29.728 | 29.724 |
| July . . . . . | 95½ | 53 | 42½ | 4.23 | 17.50 | 71.13 | 82.06 | 73.60 | 75.60 | 30.156 | 29.487 | .669 | .107 | 29.743 | 29.724 | 29.731 | 29.733 |
| August . . . . | 95 | 54 | 41 | 3.89 | 16.56 | 71.47 | 82.93 | 75.13 | 76.51 | 30.099 | 29.557 | .542 | .122 | 29.829 | 29.796 | 29.818 | 29.814 |
| September . . . | 87 | 48 | 39 | 4.30 | 16.22 | 63.53 | 76.03 | 67.56 | 69.04 | 30.086 | 29.398 | .688 | .128 | 29.881 | 29.845 | 29.876 | 29.867 |
| October . . . . | 86 | 35 | 51 | 5.48 | 15.31 | 52.70 | 64 29 | 56.98 | 57.99 | 30.201 | 29.307 | .894 | .151 | 29.865 | 29.825 | 29.859 | 29 850 |
| November . . . | 71 | 27 | 44 | 5.94 | 13.40 | 40.67 | 48.18 | 43.25 | 44.03 | 30.555 | 29.380 | 1.175 | .159 | 29.877 | 29.823 | 29.870 | 29.857 |
| December . . . | 64 | 8 | 56 | 6.46 | 12.74 | 32.24 | 39.76 | 34.71 | 35.57 | 30.495 | 29.319 | 1.176 | .197 | 29.932 | 29.895 | 29.936 | 29.921 |
| Annual means . | 95½ | 8 | 87½ | 5.15 | 15.21 | 49.22 | 59.00 | 52.53 | 53.58 | 30.555 | 29.216 | 1.339 | .160 | 29.863 | 29.822 | 29.852 | 29.846 |
| Winter . . . . | 64 | 10 | 54 | 5.42 | 11.89 | 30.08 | 37.58 | 33.16 | 33.60 | 30.462 | 29.216 | 1.246 | .215 | 29.973 | 29.926 | 29.955 | 29.951 |
| Spring . . . . | 85 | 22 | 63 | 5.20 | 17.37 | 45.55 | 56.51 | 49.59 | 50 55 | 30.321 | 29.276 | 1.045 | .148 | 29.871 | 29.822 | 29.850 | 29.848 |
| Summer . . . . | 95½ | 47 | 48½ | 4.49 | 17.22 | 69.06 | 79.90 | 71.83 | 73.60 | 30.156 | 29.375 | .781 | .117 | 29.770 | 29.742 | 29.759 | 29.757 |
| Autumn . . . . | 87 | 27 | 60 | 5.24 | 14.98 | 52.30 | 62.83 | 55.93 | 57.02 | 30.555 | 29.307 | 1.248 | .146 | 29.874 | 29.831 | 29.868 | 29.858 |
| For eleven years | 100½ | —5½ | 106 | 5.57 | 15.19 | 49.69 | 59.96 | 53.14 | 54.26 | 30.704 | 28.884 | 1.820 | .156 | 29.890 | 29.850 | 29.874 | 29.871 |

## *Meteorological Observations*—Continued.

| 1862. | Relative Humidity. | | | | | Force of Vapour. | | | | | | Rain and Melted Snow. | | Clouds. Percentage of sky covered. | | | | Winds. | Dew-point. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Means. | | | | | Means. | | | | | | Means. | | | | | | | Means. | | | |
| Months. | Max. | Min. | 7 A. M. | 2 P. M. | 9 P. M. | Max. | Min. | 7 A. M. | 2 P. M. | 9 P. M. | Average. | Amount. | No. of days on which it fell. | 7 A. M. | 2 P. M. | 9 P. M. | Average. | Monthly resultant; No. of times in 1000. | Max. | Min. | 7 A. M. | 2 P. M. | 9 P. M. | Average. |
| | p. c. | p. c. | p. c. | p. c. | p. c. | inch. | inch. | inch. | inch. | inch. | inch. | inch. | days. | p. c. | p. c. | p. c. | p. c. | Direction from. | ° | ° | ° | ° | ° | ° |
| January . . | 100 | 32 | 80.0 | 70.7 | 75.4 | .275 | .051 | .134 | .145 | .142 | .140 | 4.500 | 16 | 75 | 74 | 74 | 74 | N. 18° 26′ W., 335 | 42.7 | 3.4 | 23.81 | 25.23 | 24.49 | 24.51 |
| February . . | 100 | 44 | 80.4 | 66.6 | 77.9 | .267 | .060 | .130 | .143 | .142 | .138 | 4.277 | 15 | 76 | 73 | 61 | 70 | N. 45° 0′ W., 208 | 42.0 | 7.3 | 23.08 | 25.57 | 25.43 | 24.69 |
| March . . . | 95 | 25 | 74.4 | 56.2 | 70.5 | .389 | .081 | .149 | .159 | .171 | .159 | 3.509 | 11 | 62 | 66 | 66 | 65 | N. 43° 7′ W., 377 | 52.1 | 13.9 | 26.76 | 28.05 | 29.86 | 28.22 |
| April. . . . | 94 | 18 | 67.8 | 48.5 | 64.5 | .555 | .091 | .211 | .219 | .228 | .219 | 3.947 | 11 | 69 | 67 | 49 | 62 | N. 45° 0′ E., 47 | 61.9 | 16.2 | 34.15 | 34.34 | 35.95 | 34.81 |
| May . . . . | 93 | 18 | 64.2 | 44.9 | 60.3 | .594 | .105 | .320 | .324 | .335 | .326 | 2.083 | 9 | 60 | 60 | 41 | 54 | N. 53° 37′ W., 136 | 63.9 | 19.4 | 44.89 | 45.03 | 46.53 | 45.48 |
| June . . . . | 94 | 33 | 74.7 | 55.5 | 74.3 | .770 | .180 | .463 | .470 | .498 | .477 | 6.592 | 15 | 72 | 67 | 51 | 63 | S. 79° 23′ W., 97 | 71.4 | 31.8 | 55.94 | 56.43 | 57.91 | 56.76 |
| July . . . . | 97 | 36 | 72.7 | 49.7 | 71.0 | .813 | .311 | .561 | .544 | .594 | .566 | 2.841 | 10 | 64 | 63 | 50 | 59 | S. 58° 24′ W., 186 | 73.1 | 52.1 | 61.70 | 60.80 | 63.41 | 61.97 |
| August . . . | 87 | 30 | 70.5 | 45.6 | 65.4 | .939 | .290 | .562 | .524 | .586 | .557 | 1.455 | 7 | 47 | 59 | 38 | 48 | S. 90° 0′ W., 117 | 77.4 | 44.1 | 61.15 | 59.16 | 62.38 | 60.89 |
| September . . | 97 | 32 | 77.1 | 54.0 | 75.4 | .833 | .211 | .465 | .490 | .519 | .491 | 6.282 | 6 | 59 | 50 | 45 | 51 | N 4° 5′ E., 87 | 73.8 | 35.9 | 55.82 | 57.31 | 59.30 | 57.48 |
| October . . . | 97 | 33 | 79.5 | 59.7 | 73.5 | .695 | .133 | .340 | .378 | .365 | .361 | 4.160 | 11 | 54 | 52 | 49 | 52 | N. 73° 30′ W., 163 | 68.4 | 24.6 | 46.81 | 48.85 | 48.21 | 47.79 |
| November . . | 100 | 37 | 79.4 | 64.5 | 75.1 | .548 | .106 | .213 | .228 | .224 | .222 | 4.455 | 15 | 64 | 64 | 64 | 64 | N. 79° 0′ W., 237 | 61.6 | 19.6 | 34.64 | 35.95 | 35.70 | 35.43 |
| December . . | 92 | 31 | 78.5 | 61.5 | 74.8 | .377 | .040 | .154 | .163 | .162 | .160 | 1.555 | 8 | 53 | 59 | 43 | 51 | N. 84° 24′ W., 301 | 51.2 | —1.4 | 26.45 | 27.27 | 27.55 | 27.09 |
| Annual means | 100 | 18 | 74.9 | 56.4 | 71.5 | .939 | .040 | .308 | .316 | .330 | .318 | 45.656 | 134 | 63 | 63 | 52 | 59 | N. 58° 40′ W., 159 | 77.4 | —1.4 | 41.22 | 42.00 | 43.06 | 42.09 |
| Winter . . . | 100 | 23 | 80.0 | 66.4 | 77.3 | .390 | .051 | .140 | .154 | .152 | .149 | 10.793 | 35 | 70 | 67 | 56 | 65 | N. 47° 35′ W., 274 | 52 1 | 3.4 | 24.60 | 26.76 | 26.57 | 25.98 |
| Spring . . . | 95 | 18 | 68.8 | 49.9 | 65.1 | .594 | .081 | .227 | .234 | .245 | .235 | 9.539 | 31 | 64 | 65 | 52 | 60 | N. 48° 18′ W., 143 | 63.9 | 13.9 | 35.27 | 35.81 | 37.44 | 36.17 |
| Summer. . . | 97 | 30 | 72.6 | 50.3 | 70.2 | .939 | .180 | .529 | .513 | .559 | .533 | 10.888 | 32 | 61 | 63 | 46 | 57 | S. 72° 58′ W., 128 | 77.4 | 31.8 | 59.60 | 58.80 | 61.23 | 59.87 |
| Autumn . . | 100 | 32 | 78 7 | 59.4 | 74.7 | .833 | .106 | .339 | .365 | .369 | .358 | 14.897 | 32 | 59 | 55 | 53 | 56 | N. 64° 56′ W., 140 | 73.8 | 19.6 | 45.59 | 47.37 | 47.74 | 46.90 |
| For leven yr's | 100 | 13 | 76.1 | 57.5 | 72.4 | 1.059 | .013 | .324 | .341 | .345 | .337 | 44.936 | 127 | 59 | 60 | 45 | 55 | N. 74° 29′ W., 227 | 79.7 | —16.5 | | 43.52 | | |

*A Comparison of some of the Meteorological Phenomena of the year* 1862 *with those of* 1861, *and of the last* ELEVEN *years, at Philadelphia, Pa.*

Lat. 39° 57½′ N. Long. 75° 10½′ W. from Greenwich. Height of barometer fount, sixty feet above mean tide in the Delaware River.

| | 1862. | 1861. | 11 YEARS. |
|---|---|---|---|
| THERMOMETER. | | | |
| Highest—Degrees . | 95½° July 7 | 95° July 8 | 100½° July 21, 1854 |
| Lowest " . | 8 Dec. 21 | —1 Feb. 8 | —5½ Jan. 23, 1857 |
| Mean of warmest day | 87.67 Aug. 9 | 87.80 July 8 | 91.30 July 21, 1854 |
| Coldest day—mean | 15.83 Dec. 20 | 7.80 Jan. 13 | —1.00 Jan. 9, 1856 |
| Mean daily oscillat'n | 15.21 | 16.85 | 15.19 |
| " range . | 5.15 | 5.57 | 5.57 |
| Means at 7 A. M. . | 49.22 | 50.15 | 49.69 |
| " 2 P. M. . | 59.00 | 60.74 | 59.96 |
| " 9 P. M. . | 52.53 | 53.24 | 53.14 |
| " for the year | 53.58 | 54.71 | 54.26 |
| BAROMETER. | | | |
| Highest—Inches | 30.555 in. Nov. 16 | 30.526 in. Jan. 23 | 30.704 in. Jan. 28, 1853 |
| Lowest " . | 29.216 Feb. 24 | 29.096 May 27 | 28.884 Apr. 21, 1852 |
| Great'st d'y pressure | 30.509 Nov. 16 | 30.483 Jan. 23 | 30.611 Dec. 18, 1856 |
| Least daily pressure | 29.390 Feb. 24 | 29.243 May 27 | 28.959 Apr. 21, 1852 |
| Mean daily range . | 0.160 | 0.167 | 0.156 |
| Means at 7 A. M. . | 29.863 | 29.890 | 29.890 |
| " 2 P. M. . | 29.822 | 29.845 | 29.850 |
| " 9 P. M. . | 29.852 | 29.870 | 29.874 |
| " for the year | 29.846 | 29.868 | 29.871 |
| FORCE OF VAPOUR. | | | |
| Greatest—Inches . | 0.939 in. Aug. 8 | 0.841 in. Aug. 5 | 1.059 in. June 30, 1855 |
| Least " . | 0.040 Dec. 20 | .023 Feb. 8 | .013 Feb. 6, 1855 |
| Means at 7 A. M. . | .308 | .319 | .324 |
| " 2 P. M. . | .316 | .332 | .341 |
| " 9 P. M. . | .330 | .343 | .345 |
| " for the year | .318 | .331 | .337 |
| RELATIVE HUMIDITY. | | | |
| Greatest per cent. . | 100 per ct., often | 100 per ct., often | 100 per ct., often |
| Least " . | 18. Apr. 27, May 8 | 18 " May 2 | 13 " Apr. 13, 1852 |
| Means at 7 A. M. . | 74.9 per ct. | 74.8 " | 76.1 " |
| " 2 P. M. . | 56.4 | 54.9 | 57.5 |
| " 9 P. M. . | 71.5 | 72.5 | 72.4 |
| " for the year | 67.6 | 67.4 | 68.7 |
| CLOUDS. | | | |
| No. of clear days . | 100 days | 109 days | 111.7 days |
| " cloudy days | 265 " | 256 " | 253.5 " |
| Means of sky covered at 7 A. M. . | 62.9 per ct. | 58.7 per ct. | 59.5 per ct. |
| " 2 P. M. . | 62.8 | 61.6 | 60.0 |
| " 9 P. M. | 52.5 | 46.2 | 44.8 |
| for the year . | 59.4 | 55.5 | 54.8 |
| Rain or melted snow, amount . | 45.656 in. | 46.414 in. | 44.936 in. |
| No. of days on which rain or snow fell | 134 days | 125 days | 127 days |
| Prevailing winds, from . . . . | N. 58° 40′ W. .159 | N. 81° 41′ W. .239 | N. 74° 29′ W. .227 |

Births, Marriages and Deaths.—It will be highly gratifying to the fellows of the College to learn, that the law for the registration of births, marriages, and deaths, in which they took an early and active part, has thus far been attended with very satisfactory results. Nor will it be considered a useless repetition to add, that it has already become a popular and permanent institution of our city. No expense has been spared by the Board of Health, to carry out efficiently the objects of this law. Nor is it any longer considered an unnecessary tax upon time, by those who are required to make their returns. For the most part the law is cheerfully and promptly complied with by all. The few exceptions to this are rapidly yielding their opposition, as the value of the law becomes more generally known and appreciated.

*Births.*—The births registered for the year 1862 (Table I.) have amounted to 14,741; of these, 7609 were males and 7132 were females. This shows an excess in favour of males equal to 7 per cent.

From investigations made by M. Villermé, of Paris, and confirmed by Dr. Emerson, in a paper on the Medical Statistics of Philadelphia, published in 1831,[1] in which he constructed a table of the births for each month, during a period of ten years, he showed that certain months of the year, independent of other causes, exerted an unfavourable influence on both conception and the increase of population by reproduction. "These causes seem to prevail during the extreme heat of summer and in the commencement of autumn, the months of August, July and September, standing lowest in the scale designating the months of conception."

By taking the number of births for each month during the two full years in which the registration law has been in operation, 1861 and 1862, and arranging them so as to place those highest in the scale of births in their numerical order, and opposite to these the corresponding months of conception, and similar results with those procured by Dr. Emerson, on a larger scale, will be observed, as in the following table:—

| Months. | Whole Number of Births. | Corresponding Months of Conception. |
|---|---|---|
| 1. January | 2898 | June |
| 2. March | 2893 | April |
| 3. December | 2706 | October |
| 4. February | 2702 | November |
| 5. August | 2695 | March |
| 6. October | 2684 | May |
| 7. November | 2684 | February |
| 8. July | 2676 | December |
| 9. September | 2667 | January |
| 10. June | 2497 | September |
| 11. May | 2459 | July |
| 12. April | 2451 | August |

Thus it will be seen, that the months furnishing the minimum of births and conceptions for the two years correspond with those given by Dr. Emerson for a period of ten years, viz: August, July and September, the months of conception, and April, May and June the months giving the lowest number of births.

[1] Am. Journal of the Medical Sciences, vol. ix. p. 21.

**Table I.**—*Table of Births under the Registration Law, for the year ending December 31, 1862, with the Wards, Sexes, and Colour designated, together with the Percentage and Ratio of Births to Population of each Ward.*

| Months. | Total. | Births. | | Black. | | Stillborn. | | Twins. | Triplets. | Wards. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M. | F. | M. | F. | M. | F. | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| January | 1,396 | 751 | 645 | 14 | 14 | 46 | 30 | 12 | .. | 87 | 57 | 57 | 53 | 42 | 27 | 76 | 42 | 35 | 51 |
| February | 1,228 | 645 | 583 | 5 | 6 | 36 | 19 | 8 | .. | 79 | 54 | 34 | 71 | 24 | 41 | 71 | 23 | 39 | 41 |
| March | 1,325 | 645 | 680 | 8 | 9 | 38 | 22 | 16 | .. | 80 | 60 | 45 | 70 | 30 | 36 | 61 | 27 | 28 | 41 |
| April | 1,128 | 572 | 556 | 11 | 13 | 27 | 25 | 8 | .. | 78 | 54 | 47 | 53 | 32 | 29 | 58 | 28 | 20 | 42 |
| May | 1,173 | 615 | 558 | 13 | 10 | 33 | 33 | 17 | .. | 77 | 62 | 44 | 58 | 27 | 25 | 50 | 35 | 24 | 51 |
| June | 1,152 | 584 | 568 | 8 | 12 | 23 | 29 | 19 | .. | 76 | 63 | 47 | 53 | 22 | 33 | 70 | 37 | 20 | 29 |
| July | 1,181 | 610 | 571 | 7 | 14 | 33 | 25 | 11 | .. | 83 | 68 | 32 | 53 | 44 | 30 | 54 | 29 | 27 | 34 |
| August | 1,206 | 627 | 579 | 21 | 14 | 35 | 26 | 14 | .. | 81 | 57 | 47 | 61 | 37 | 30 | 57 | 33 | 28 | 49 |
| September | 1,227 | 622 | 605 | 7 | 9 | 31 | 18 | 8 | .. | 108 | 64 | 45 | 56 | 34 | 25 | 54 | 33 | 32 | 30 |
| October | 1,266 | 683 | 583 | 2 | 17 | 48 | 23 | 17 | .. | 90 | 73 | 36 | 58 | 36 | 25 | 66 | 28 | 34 | 44 |
| November | 1,231 | 650 | 581 | 15 | 5 | 37 | 23 | 8 | .. | 86 | 63 | 48 | 60 | 23 | 25 | 53 | 32 | 32 | 47 |
| December | 1,228 | 605 | 623 | 6 | 11 | 27 | 24 | 16 | 1 | 91 | 74 | 33 | 47 | 32 | 35 | 50 | 25 | 33 | 31 |
| Total | 14,741 | 7609 | 7132 | 117 | 134 | 414 | 297 | 154 | 1 | 1016 | 749 | 515 | 693 | 383 | 361 | 720 | 372 | 352 | 490 |
| Population of each ward | | | | | | | | | | 30,886 | 29,123 | 19,929 | 23,461 | 24,792 | 14,882 | 31,267 | 27,770 | 17,196 | 21,849 |
| Percentage of births to population | | | | | | | | | | 3.28 | 2.57 | 2.58 | 2.95 | 1.55 | 2.42 | 2.30 | 1.34 | 2.04 | 2.24 |
| Ratio of births to population | | | | | | | | | | 30.39 | 38.88 | 38.69 | 33.85 | 64.72 | 41.22 | 43.42 | 74.65 | 48.85 | 44.58 |

| Months. | Wards. | | | | | | | | | | | | | | | Wards not given. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| January | 54 | 40 | 55 | 47 | 107 | 43 | 81 | 43 | 100 | 84 | 49 | 45 | 30 | 63 | 20 | 8 |
| February | 39 | 49 | 37 | 38 | 82 | 49 | 61 | 34 | 92 | 74 | 40 | 37 | 47 | 64 | 6 | 2 |
| March | 31 | 48 | 40 | 49 | 95 | 61 | 72 | 48 | 100 | 74 | 43 | 37 | 47 | 76 | 18 | 8 |
| April | 33 | 44 | 31 | 38 | 63 | 56 | 53 | 40 | 79 | 61 | 42 | 32 | 41 | 54 | 17 | 3 |
| May | 33 | 28 | 30 | 47 | 86 | 44 | 61 | 40 | 79 | 80 | 34 | 41 | 38 | 61 | 13 | 5 |
| June | 32 | 28 | 46 | 52 | 72 | 46 | 64 | 41 | 55 | 71 | 31 | 44 | 31 | 69 | 17 | 3 |
| July | 32 | 36 | 31 | 46 | 80 | 39 | 66 | 42 | 69 | 85 | 37 | 44 | 33 | 66 | 13 | 8 |
| August | 31 | 28 | 24 | 46 | 81 | 49 | 64 | 46 | 74 | 86 | 42 | 32 | 40 | 64 | 16 | 3 |
| September | 43 | 43 | 39 | 52 | 97 | 57 | 61 | 33 | 73 | 69 | 36 | 34 | 44 | 52 | 12 | 1 |
| October | 49 | 39 | 48 | 65 | 78 | 52 | 55 | 43 | 67 | 80 | 43 | 35 | 36 | 58 | 24 | 4 |
| November | 47 | 32 | 37 | 40 | 88 | 47 | 65 | 37 | 100 | 77 | 31 | 35 | 33 | 67 | 22 | 4 |
| December | 40 | 50 | 45 | 52 | 80 | 62 | 67 | 33 | 69 | 82 | 29 | 47 | 43 | 49 | 16 | 13 |
| Total | 464 | 465 | 463 | 572 | 1009 | 605 | 770 | 480 | 957 | 923 | 457 | 463 | 463 | 743 | 194 | 62 |
| Population of each ward | 16,681 | 16,681 | 20,045 | 24,258 | 32,091 | 20,067 | 23,264 | 20,441 | 38,828 | 29,963 | 17,159 | 17,173 | 23,985 | 23,738 | | |
| Percentage of births to population | 2.78 | 2.78 | 2.31 | 2.35 | 3.14 | 3.01 | 3.30 | 2.34 | 2.46 | 3.08 | 2.66 | 2.69 | 1.93 | 3.13 | | |
| Ratio of births to population | 35.95 | 35.87 | 43.29 | 42.40 | 31.80 | 33.16 | 30.21 | 42.58 | 40.57 | 32.46 | 37.54 | 37.09 | 51.80 | 31.94 | | |

The explanation proposed by M. Villermé to account for the variation found at different seasons in the births and conceptions, was "the direct or indirect influence of the annual revolution of the earth around the sun, or in other words, to the order of the seasons." Dr. Emerson falls in with the views of the French *savan*, that fecundity in this region at least, is materially affected by high temperature, but considers that an epidemic influence, during the period embraced in his calculations, acted as a retarding force to conception.

I am therefore disposed to attribute the diminished number of births in the months of April, May and June, for the two years past, to the extreme heat in the corresponding months of conception, viz: August, July and September, in connection with the insalubrity of the season, as it is well understood that the prevalence of endemics, during these months, increases materially our bills of mortality.

The first ward, with a population of 30,886, contributed 1006, equal to an increase of 3.28 per cent. of its population. The fifteenth, containing 32,091 souls, gave 1009, or an increase of 3.14 per cent. The nineteenth ward, with its teeming population of 38,828 does not appear to be as productive as the two former wards, as it added only 957 births, an increase of 2.46 per cent. This number of recorded births is less by 2530, or 2.72 per cent., than that of 1861.

This falling off cannot be attributed to a defective record, caused by a delinquency on the part of those appointed to collect the births, or of those required to make returns. The greatest watchfulness has been observed by the health officer and his clerks, to secure the monthly returns, and I have the assurance that the number of physicians and midwives making returns, has been greater than those for 1861.

I can only attribute this decrease in the number of births, to the disturbing events connected with the rebellion.

It will be borne in mind that not only epidemics, but other agencies of a moral, social and national character, operating on a community to the depression of their mental and physical energies, will, by reducing the forces of organic life, unfavourably affect the increase of the population by reproduction.

I therefore believe that to the discouraging influences of the present war, and the agitated and unsettled state of the country, may be justly ascribed, in a great measure, the falling off of the totals of births for the year.

The daily average of births has been $40\frac{1}{3}$.

The first three months of the year furnished the largest number of births, April, May and June the lowest. January gave the highest, 1396, and April the lowest, 1128.

The most prolific ward appears to have been the seventeenth which yielded 770 births, or 3.30 per cent. in a population of 23,264.

The ward yielding the fewest births according to its population was the eighth. With a population of 27,770 it gave only 372 births, or 1.34 per cent., which is only one in 74.65 hundredths of its inhabitants.

In fifteen out of the twenty-five wards, the births exceeded the deaths. The fifteenth, twentieth, twenty-first, and twenty-second wards, presented the greatest contrast between the births and deaths. In the former, they exceeded the deaths by 190. In the three latter, they averaged an excess of 174.

In the remaining ten wards, the deaths exceeded the births, and the inference is a want of material prosperity in the community, or a defect in their natural numerical growth.

The preceding year (1861) yielded an increase of population by births over the deaths of 19 per cent. The year under consideration (1862), shows a decrease in population, by the deaths exceeding the births, equal to 2.38 per cent. This calculation is based upon the aggregate of deaths recorded for the year, but if the deaths of soldiers are deducted, the births will furnish an increase in the population of 6 per cent. over the waste by death.

The number of births on record from our coloured population amounted to 251. The deaths in the population reached 721. This record gives an excess of deaths among blacks of 65 per cent. over the births, and if the hypothesis be true, that a preponderance of births over deaths in a community is an index of prosperity in numerical growth, the inference is that our black population is diminishing.

Twin births to the number of 154 have been recorded. One triplet birth was returned for the year, in the month of December.

The stillbirths amounted to 711. Of this number 414 were males and 297 were females; an excess of male stillborn children equal to 39 per cent.

*Marriages.*—The total of marriages recorded for the year (Table II.) have been 4662, an increase of 245 over those for 1861.

TABLE II.—*Ages of Persons Married and recorded under the Registration Law for the year ending December* 31, 1862.

| | | AGES OF THE WOMEN. | | | | | | | | | TOTAL OF THE MEN. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Under 20 | 20 to 25 | 25 to 30 | 30 to 40 | 40 to 50 | 50 to 60 | 60 to 70 | 70 to 80 | Age not given. | |
| AGES OF THE MEN. | Under 20 | 15 | 4 | | | | | | | | 19 |
| | 20 to 25 | 565 | 798 | 92 | 13 | 3 | | | | 12 | 1483 |
| | 25 to 30 | 166 | 760 | 328 | 64 | 4 | | | | 17 | 1339 |
| | 30 to 40 | 62 | 326 | 276 | 198 | 20 | 1 | | | 6 | 889 |
| | 40 to 50 | 2 | 38 | 58 | 124 | 42 | 1 | | | 6 | 271 |
| | 50 to 60 | | 4 | 6 | 35 | 24 | 16 | 1 | | 1 | 87 |
| | 60 to 70 | | 1 | 1 | 3 | 10 | 10 | 1 | | 1 | 27 |
| | 70 to 80 | | | | 1 | 3 | 3 | 2 | | | 9 |
| | Age not given. | 6 | 8 | 7 | 2 | | | | | 515 | 538 |
| TOTAL OF THE WOMEN. | | 816 | 1939 | 768 | 440 | 106 | 31 | 4 | | 558 | 4662 |

This department of the office does not afford the same amount of satisfaction that is given in the other branches. The defect is due alone to the indifference on the part of clergymen in making their returns in accordance with the law.

The table referred to gives the ages of the parties married as far as they were returned. It will be seen, however, that in 1096, or about 12 per cent. of the names returned, the ages were not given.

Of the parties married, 816, or 17.50 per cent. of the brides, were under twenty years of age, whereas only 19 of the grooms, or 00.47 per cent. were in their minority.

The most popular age for marriage appears to be between twenty and twenty-five. During this quinquennial period there were 1939 brides, equal to 41.59 per cent. of the total of marriages, and 1483 grooms, equal to 31.81 per cent.

Previous to this period, or twenty-five years of age, the brides, in point of numbers, are in the ascendant, but beyond it they rapidly decline, while the grooms increase.

Between twenty-five and thirty, there were only 768 brides or 16½ per cent., and 1339 or 28.72 per cent. of grooms.

There are nine marriages registered of men between seventy and eighty, and four women between the ages of sixty and seventy.

Table III. furnishes a record of the nativity of the brides and grooms.

TABLE III.—*Number of Marriages registered under the Registration Law for the year ending December* 31, 1862, *with the Nativity of the Brides and Grooms.*

| *NATIVITIES.* | | BIRTHPLACE OF BRIDES. | | | TOTAL OF GROOMS. |
|---|---|---|---|---|---|
| | | United States. | Foreign. | Not given. | |
| BIRTHPLACE OF GROOMS. | United States . . . | 2234 | 239 | 26 | 2499 |
| | Foreign . . . . . | 425 | 1535 | 4 | 1964 |
| | Not given . . . . | 27 | 14 | 158 | 199 |
| TOTAL OF BRIDES . . . . | | 2686 | 1788 | 188 | 4662 |

Of the whole number of persons married, 5185, equal to 55 per cent., were American born, and 3752, or 40 per cent., were of foreign birth.

387 or 4 per cent. of the parties married, were returned without their place of birth being named.

2686, or 57.61 per cent., of the brides were American born; of these, 425, or 16 per cent., married foreigners, while only 9 per cent. of the grooms born in the United States married foreign women.

*Deaths.*—The following table furnishes a general summary of the deaths for the year 1862:—

| | | |
|---|---|---|
| White | 14,376 | |
| Coloured | 721 | |
| Total | | 15,097 |
| Males | 8,315 | |
| Females | 6,782 | |
| Total | | 15,097 |
| Male minors or children | 4,266 | |
| Female " " | 3,772 | |
| Total minors | 8,038 | |
| Male adults | 4,049 | |
| Female adults | 3,010 | |
| Total adults | 7,059 | |
| Total | | 15,097 |
| Deaths from registered diseases | 13,232 | |
| Deaths from stillborn | 711 | |
| Deaths from old age | 219 | |
| Deaths from unknown causes | 97 | |
| Deaths from external and accidental causes | 838 | |
| Total from all causes | | 15,097 |

A comparison of this total of 15,097 with the total returns of the previous year, 1861, will show an increase of deaths recorded for 1862, amounting to 629, equivalent to an increase of 4 per cent., and is the highest aggregate on record of any former year.

The announcement of this fact is at variance with my congratulatory introduction, and requires an explanation.

It would be doing great injustice to the sanitary and mortuary interests of our city if the conclusion should be entertained that the augmentation of deaths for the year 1862, as found upon the record, has been the result of a high rate of city mortality growing out of, and influenced by the invasion and progress of epidemic diseases. Fortunately, there is ample and incontestable evidence to prove the contrary.

A single glance at the death-table from zymotics—an index of public health—a class of diseases by which may be distinguished the salubrity or unhealthiness of the year, furnishes the proof that they have fallen off in the aggregate to the extent of 558, equal to 16 per cent. when compared with those of the previous year, 1861.

One remarkable sign of the improved condition of the health of our city is the fact that those destructive epidemic diseases, scarlet fever, smallpox, and diphtheria, which prevailed in 1861 to a fearful degree, carrying to the grave 2450 of our population, have this year carried off only 1397 or 57 per cent. less than in 1861, and ere the year 1862 had closed, their epidemic influence was so far diminished as scarcely to have been recognized in the community.

There is, however, an agency foreign to the ordinary operating causes for the increase of our city mortality that has contributed in a large degree to swell the number of the annual death-roll. It is the war in which the country is at present involved. From this cause alone it can be shown that 1202 of the deaths registered are of the number who had fallen on the

battle-field, or had died from disease contracted in the camp, or on the march, many of whom have expired in the government hospitals throughout our city, and many who had returned home only to die among their friends.

None of these deaths properly belong to the annual mortality of the city, and in order to form a correct estimate, every one of them should be deducted. By this method the mortality will be reduced to 13,895, or about 4 per cent. less than that of 1861.

It may therefore with safety be announced that, notwithstanding the successful operation of the registration law, to which I so fully referred in my last report, and which enables us to secure a nearer approximation to the true number of deaths than ever before, the deaths of 1862 fall below those for 1861. This result furnishes the evidence that the city has been comparatively healthy during the year.

Nor is this good share of health to be ascribed in any measure to extensive sanitary improvements through the agency of our municipal authorities. As in former years, so with the past, very little interest has been taken towards the improvement of the hygiene of our city on the part of our councils.

The river docks continue to be receptacles for every description of filth, sending forth their fetid and deleterious miasma into the atmosphere; the city sewerage, with all the attention recently bestowed upon the traps at the inlets to the culverts, still afford imperfect drainage. Under existing arrangements, which allow the indiscriminate use of the culverts for conveying away the deposits of privies and water-closets, as well as the solid refuse from houses, yards, gutters, and streets, they may eventually entail upon the community a far greater sanitary evil than they are designed to remove.

The system of street-cleaning is still defective in many essentials. At best, it is very imperfectly executed. Many districts of the city, where the greatest need exists for sanitary conservation, receive but little if any attention.

Intra-mural interments, as applicable to those graveyards located in densely-populated neighbourhoods and in grounds already crowded to saturation with the decomposing remains of the dead, continue to be a nuisance, dangerous to public health, demanding legislative enactment as the only certain remedy for their entire abatement.

The proper disposal of street dirt and kitchen garbage, with their disgusting and unhealthy emanations, especially during the warm months—underground and cellar tenements, and other domiciliary arrangements, where defective light and ventilation with an overcrowded population and a want of the common conveniences of life prevail—slaughter-houses, hogs and pens, cow stables, filthy yards and alleys, together with a host of offensive manufacturing establishments, and a great diversity of minor nuisances, continue to be sanitary evils, crying aloud for redress.

These and similar causes may be regarded as among the prominent baneful influences contributing to depress the vital energies of our population, and engendering diseases of zymotic origin—diseases that are preventable, and which, with a more general knowledge of the laws of hygiene and a wisely directed practice, would in a great measure be obviated.

In addition to these prevalent and established causes for atmospheric contamination during the year, our once quiet and peaceful city was selected by the government as a location admirably adapted for hospital accommodations for the sick and wounded of the army. During the year

just closed there have been as many as twenty-two (22) military hospitals opened and occupied in various sections of the city.

Great anxiety at one time was felt for the health of the city when these hospitals were about to be opened. It was hardly to be expected that the introduction of several thousand cases of wounded and sick soldiers, under the most unfavourable circumstances for hygienic purposes, could take place—in addition to our ordinary amount of disease—without their exerting a contaminating atmospheric influence upon the sick as well as upon the healthy of the community. Nor was the fact that camp and typhoid fevers and dysenteries, and suppurating wounds of every description, would make up a large majority of the cases, and that the remainder would comprise the broken-down and feeble of the army, whose depraved systems were already thoroughly prepared for infection, calculated to lessen the excitement in the public mind.

It is highly gratifying, however, to be able to report that these fears and apprehensions have proved groundless. The admirably selected locations of these hospitals, with but few exceptions; the excellent management and unremitted attention of the surgeons in charge; the skill displayed by the attending surgeons and physicians; the valuable hygienic arrangements instituted, and, in short, the entire medical police established throughout, have proved of inestimable value in preventing the introduction and spread of epidemic and infectious diseases.

It would seem to be almost out of place, in this report, to allude in any manner to the extraordinary and praiseworthy services bestowed upon the sick and wounded soldiers, who have been the recipients, from time to time, of these hospitals, by all classes of our citizens. I cannot refrain from noticing more especially the commendable and the disinterested devotion of the ladies, who have contributed so largely to the alleviation of the sufferings of these noble men, by their personal attendance, and have distributed with a liberal hand supplies and delicacies of every description, with a kindness and earnestness which belong alone to woman.

Through the politeness of the surgeons in charge of the government hospitals located in our city, I have been able to furnish the number of cases under treatment, as well as the number of deaths during the year—or, from the date of their opening up to the 31st of December, 1862, as follows:—

| Opened in 1862. | Location. | Surgeons. | Cases. | Deaths. | Per ct. | Deaths to cases. |
|---|---|---|---|---|---|---|
| Jan. 1st | Broad Street[1] | Dr. John Neal | 3,206 | 89 | 2.50 | 1 in 36 |
| June 1st | W. Philadelphia | " Hayes | 5,156 | 164 | 3 | 1 in 31½ |
| March 9th | South Street[2] | " Hart | 1,163 | 47 | 4 | 1 in 25 |
| " | 5th & Buttonwood | " Bournonville | 1,665 | 78 | 4.75 | 1 in 21 |
| March 5th | Wood Street | " Horner | 1,021 | 22 | 2 | 1 in 46 |
| Aug. 19th | Filbert Street | " Breed | 967 | 16 | 2 | 1 in 60 |
| Jan 1st | Christian Street | " Reese | 964 | 40 | 4 | 1 in 24 |
| June 18th | Master Street | " Goddard | 953 | 43 | 4.50 | 1 in 22 |
| Sept. 3d | Race Street | " Burpee | 828 | 9 | 1 | 1 in 92 |
| March | St. Joseph's | " Moon | 713 | 29 | 4 | 1 in 24 |
| July 5th | Germantown | " Darrach | 651 | 4 | .50 | 1 in 257 |
| July 30th | Episcopal | " Thomas | 531 | 33[3] | 7 | 1 in 16 |
| " | 4th & George | " Harlow | 527 | 46 | 9 | 1 in 11½ |
| Aug. 18th | Hestonville | " Agnew | 301 | 4 | 1 | 1 in 75 |
| " | 12th & Buttonwood | " Morton | 257 | 1 | 0.39 | 1 in 163 |
| Nov. 2d | Haddington | " Levis | 191 | | | |
| " | Turner's Lane | " E. S. Dunster | 606 | 17 | 2.75 | |
| March 1st | Summit House | " Sergeant | 773 | 32 | 4 | 1 in 24 |
| July 11th | Catharine Street | " Picot | 199 | 8 | 4 | 1 in 25 |
| " | Broad & Prime | " Kenderdine | 270 | 35[3] | 13 | 1 in 7 |
| " | Islington Lane | " J.V. Patterson | 17 | 1 | | 1 in 17 |
| " | Camac's Woods | " W. M. Camac | 14 | | | |
| | | | 20,973 | 718 | 3.39 | 1 in 44 |
| | Cooper Shop | " Nebinger | | 8 | | |
| | Union Hospital | " Ward | | 14 | | |

From this record it will be seen that 20,973 medical and surgical cases have been treated in these hospitals, with a loss by death of only 718, or 3 per cent., and as one death in every 44 of the cases.

When all the unfavourable circumstances surrounding these sick and wounded soldiers from the date of their injuries on the battle field, or their sickness in camp, their exposure and sufferings, from the want of timely surgical and medical attention, the distance they were conveyed by land and water carriage, and the unpromising condition in which many of them were found upon their arrival at the hospital to which they were conveyed, some of whom were moribund, and quite a number dying on that or the following day—the wonder is, that the percentage of mortality among them was not far higher. No stronger evidence could be produced of the skilful manner in which the medical and surgical treatment in the government hospitals of our city has been conducted, than this limited percentage of deaths.

Estimating the population of the city at 600,000, and the aggregate deaths on record 15,097, as represented in Table No. 4, which includes 711 stillborn children, and 1202 deaths of soldiers, which do not properly belong to our city mortality, and it gives us one death in every 40, or twenty-five deaths in every 1000 of the population.

By deducting the stillborn and the deaths of soldiers which I have designated as of foreign origin, and the result presents a more favourable estimate; one death in every 45 of the population, and twenty-two in every 1000.

[1] The regular treatment did not commence until June 1. [2] Opened in 1861.
[3] Many of these were moribund when brought from the cars.

Of the sexes the rate of mortality has been 8315 males, and 6782 females. This is an unusual excess of male deaths, equal to 1523 or 23 per cent., amounting to more than double the ordinary excess of deaths among males, and may be properly attributed to the large number of the remains of soldiers brought here for burial, and of those who expired in the U. S. hospitals in our city.

The adult deaths were 7059; the minors or children 8038. This excess of deaths in minors, or those under twenty years of age, has been unusually small, not over 14 per cent. Last year it reached 64 per cent. The highest number of deaths in any one period of life, was among infants under one year. They amounted to 3661 (including the stillborn) equal to 23 per cent. of all the deaths. Those under five years numbered 6626, equal to 44 per cent.

By reference it will be found that these figures fall considerably below those of the previous year. This difference is owing mainly to the decline of deaths from smallpox, scarlet fever and diphtheria.

The number of adult deaths compared with those of minors is a very prominent feature in this report. Those between 20 and 40 years amounted to 3336, or 48.50 per cent. above those in the same period for 1861. Those between 40 and 70 were 2666, or 18.69 per cent. more than those in 1861.

From seventy upwards to extreme old age, the deaths were 1057, or 18.69 per cent. over those in 1861; the variation, though not very great, is sufficient to prove that some extraordinary influence was at work to effect the change.

The same outside cause, to which I have already adverted—the mortality in the army of the United States, will in a great degree account for these results.

Monthly Mortality.—The deaths for several months throughout the year are given in the accompanying table.

*Return of Deaths in each Month, showing the number of Deceased Males and Females, Adults and Children, for the year* 1862.

| 1862. Months. | Males. | Females. | Adults. | Children. | Total. |
|---|---|---|---|---|---|
| January | 664 | 650 | 557 | 757 | 1,314 |
| February | 576 | 504 | 460 | 620 | 1,080 |
| March | 601 | 603 | 531 | 673 | 1,204 |
| April | 660 | 553 | 586 | 627 | 1,213 |
| May | 685 | 660 | 653 | 692 | 1,345 |
| June | 551 | 451 | 480 | 522 | 1,002 |
| July | 966 | 801 | 649 | 1,118 | 1,767 |
| August | 1,061 | 594 | 803 | 952 | 1,755 |
| September | 573 | 464 | 490 | 547 | 1,037 |
| October | 754 | 481 | 676 | 559 | 1,235 |
| November | 570 | 451 | 549 | 472 | 1,021 |
| December | 654 | 470 | 625 | 499 | 1,124 |
| | 8,315 | 6,782 | 7,059 | 8,038 | 15,097 |
| | 15,097 | | 15,097 | | |

The greatest number of deaths in any one month was in July, which furnished 1767, while August contributed 1755. June gave the lowest, 1002, and November the next, 1021.

The deaths in every month exceeded 1000, and have been more equally distributed than usual.

The month of May, generally a healthy period of the year, gave 1345 deaths—the third in numerical order of mortality.

The months of October, November and December, furnished a heavier mortality among adults than in children, equal to 20 per cent. This is an uncommon occurrence, and can only be accounted for by the deaths among soldiers.

Mortality in Wards.—The following table presents the deaths in each of the twenty-four wards, with the population of each ward according to the last census. The ratio of deaths to population calculated in this table, will differ from that elsewhere given, as it is based on the census of 1860, instead of reckoning the natural increase of the population.

Table IV.—*Mortality in each Ward, with the Population (according to the late Census), the ratio of Deaths to Population, the Percentage of Deaths in each Ward to the Total Mortality, and Deaths in each thousand of the Population. Also the Deaths from unknown Wards, from the Almshouse and from the Country.*

| WARDS. | Population last census. | Deaths. | Deaths to population. | Per cent. of deaths to total mortality. | Deaths in each thousand of population. |
|---|---|---|---|---|---|
| First . . . . | 30,886 | 1,037 | 1 in 30 | 6.86 | 33.48 |
| Second . . . . | 29,123 | 827 | 1 " 36 | 5.47 | 28.51 |
| Third . . . . | 19,929 | 491 | 1 " 41 | 3.25 | 24.55 |
| Fourth . . . | 23,461 | 711 | 1 " 33 | 4.70 | 30.87 |
| Fifth . . . . | 24,792 | 520 | 1 " 48 | 3.44 | 20.80 |
| Sixth . . . . | 14,882 | 350 | 1 " 43 | 2.31 | 23.33 |
| Seventh . . . | 31,267 | 829 | 1 " 38 | 5.49 | 26.74 |
| Eighth . . . . | 27,770 | 465 | 1 " 60 | 3.08 | 16.60 |
| Ninth . . . . | 17,196 | 338 | 1 " 51 | 2.23 | 19.88 |
| Tenth . . . . | 21,849 | 599 | 1 " 37 | 3.96 | 27.27 |
| Eleventh . . . | 16,681 | 384 | 1 " 44 | 2.54 | 22.58 |
| Twelfth . . . | 16,681 | 429 | 1 " 39 | 2.84 | 25.23 |
| Thirteenth . . | 20,045 | 380 | 1 " 53 | 2.51 | 19.00 |
| Fourteenth . . | 24,258 | 493 | 1 " 50 | 3.26 | 20.54 |
| Fifteenth . . . | 32,091 | 819 | 1 " 40 | 5.42 | 25.59 |
| Sixteenth . . . | 20,067 | 520 | 1 " 39 | 3.44 | 26.00 |
| Seventeenth . . | 23,264 | 677 | 1 " 35 | 4.48 | 29.43 |
| Eighteenth . . | 20,441 | 596 | 1 " 35 | 3.94 | 29.80 |
| Nineteenth . . | 38,828 | 1,042 | 1 " 38 | 6.90 | 26.71 |
| Twentieth . . | 29,963 | 736 | 1 " 41 | 4.87 | 24.53 |
| Twenty-first . . | 17,159 | 284 | 1 " 61 | 1.88 | 16.70 |
| Twenty-second . | 17,173 | 286 | 1 " 61 | 1.89 | 16.82 |
| Twenty-third . | 23,985 | 329 | 1 " 73 | 2.17 | 13.70 |
| Twenty-fourth . | 23,738 | 660 | 1 " 36 | 4.37 | 27.50 |
| Twenty-fifth . . | ..... | 130 | ..... | 0.86 | ..... |
| Unknown . . . | ..... | 135 | ..... | 0.89 | ..... |
| Almshouse . . | ..... | 508 | ..... | 3.36 | ..... |
| From the country | ..... | 522 | ..... | 3.59 | ..... |
| Total for 12 mos. | ..... | 15,097 | | 100.00 | |
| Total population | 565,529 | | | | |
| Ratio of deaths to population | | ..... | 1 in 38 | | |

The first ward, this year, furnishes the highest number of deaths according to its population, 1037, and the twenty-third the lowest, 329. The former giving .33 and the latter 13 in every thousand of their population.

The first ward therefore appears to have been the most unhealthy, and the twenty-third the healthiest.

The deaths in the nineteenth ward are reduced a fraction less than in 1861, and although charged with 1042 deaths, it rates the eighth in the line of descent from the first ward, the most unhealthy, the deaths being 26.71 in every thousand of its population.

The seventeenth ward last year gave 36 deaths to every thousand of its population, and was rated the most unhealthy. This year it contributes only 29.80 to each thousand, and stands the fourth in numerical order from the first, the most unhealthy.

The five most unhealthy wards, all of them crowded and defective in sanitary improvement, have been the first, fourth, eighteenth, seventeenth and second, in the order named. They have furnished 32 per cent. of all the deaths for the year.

These are the same found grouped together in last year's report as the most unhealthy—substituting, however, the second for the nineteenth, and taking its place as the fifth in the line of descent from the most unhealthy.

There has been an increase in the number of deaths recorded, over those of the former year 1861—in fifteen of the wards, while in the ninth, eleventh, thirteenth, sixteenth, seventeenth, nineteenth, twentieth, twenty-first and twenty-third, they have fallen off.

The eighth ward, with its 27,770 inhabitants, continues to present a very favourable record for health. Furnishing only 1 death in every sixty, or 16 deaths in every thousand of its population, while its adjoining ward on the south, the seventh, with a population of 31,267, contributes 1 death in every 38, or $26\frac{7}{10}$ in every thousand of its population. This unfavourable contrast with its northern neighbor, can readily be accounted for by the numerous imperfections that will be found to exist in its sanitary condition, particularly in its eastern, southern and south-western sections.

The ninth, thirteenth and fourteenth wards, with their combined population of 61,499, present also a very favourable record. They return 1 death to 51, or 19.80 in every thousand of their population.

Zymotic Diseases.—This class embraces those which belong to epidemics, endemics, and contagious diseases, and have their origin in causes which are specific and local, and considered as preventable wherever a careful attention is given to sanitary improvements. These are the diseases which carry off so many of our infant population, especially among the indigent, and those who are compelled to rear their offspring in the crowded sections of the city, where the provision for ventilation, light, and other sanitary arrangements, is defective in the extreme. The deaths from the diseases under this head, as may be seen by the accompanying table (Table V.), have amounted to 3506. Compared with those of 1861, the previous year, and they are less by 558, or 16 per cent.

## TABLE V.—*Zymotic, Epidemic, Endemic, and Contagious Diseases, for* 1862.

Division 1. *Showing Sex and Age.*

| DISEASES. | TOTAL. | SEX. | | | | AGES. | | | | | | | | | | | | | | ADULTS. | MINORS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | | |
| Cholera | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " infantum | 629 | 321 | 308 | 321 | 308 | 428 | 170 | 31 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 629 |
| " morbus | 58 | 26 | 32 | 6 | 5 | 4 | 3 | .. | 1 | 3 | .. | 4 | 8 | 4 | 6 | 10 | 12 | 3 | .. | .. | .. | 47 | 11 |
| Diarrhœa | 417 | 302 | 115 | 65 | 52 | 61 | 23 | 14 | 6 | .. | 13 | 133 | 54 | 31 | 38 | 20 | 15 | 8 | .. | 1 | .. | 300 | 117 |
| Diphtheria | 325 | 152 | 173 | 132 | 169 | 26 | 54 | 125 | 77 | 10 | 9 | 15 | 5 | 1 | 2 | .. | 1 | .. | .. | .. | .. | 24 | 301 |
| Dysentery | 163 | 98 | 65 | 43 | 31 | 20 | 38 | 9 | 3 | 1 | 3 | 22 | 30 | 13 | 6 | 8 | 6 | 4 | .. | .. | .. | 89 | 74 |
| Erysipelas | 74 | 42 | 32 | 25 | 21 | 26 | 5 | 7 | 3 | 3 | 2 | 6 | 5 | 5 | 5 | 3 | 2 | 2 | .. | .. | .. | 28 | 46 |
| Fever, congestive | 9 | 8 | 1 | 2 | .. | 1 | .. | .. | .. | 1 | .. | 2 | 2 | 1 | 1 | .. | 1 | .. | .. | .. | .. | 7 | 2 |
| " intermittent | 7 | 4 | 3 | .. | 2 | 1 | 1 | .. | .. | .. | .. | 3 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 5 | 2 |
| " eruptive | 1 | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| " malignant | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. |
| " remittent | 54 | 27 | 27 | 8 | 15 | 2 | 5 | 7 | 3 | 1 | 5 | 12 | 5 | 4 | 4 | 4 | 1 | 1 | .. | .. | .. | 31 | 23 |
| " scarlet | 461 | 222 | 239 | 220 | 236 | 35 | 82 | 228 | 101 | 8 | 2 | 3 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 5 | 456 |
| " typhoid | 658 | 490 | 168 | 114 | 71 | 2 | 7 | 36 | 31 | 18 | 91 | 258 | 90 | 59 | 34 | 19 | 10 | 2 | 1 | .. | .. | 473 | 185 |
| " typhus | 37 | 18 | 19 | 7 | 5 | .. | .. | 3 | 5 | 1 | 3 | 5 | 9 | 7 | 3 | 1 | .. | .. | .. | .. | .. | 25 | 12 |
| " yellow | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. |
| Hooping cough | 208 | 105 | 103 | 105 | 103 | 98 | 55 | 46 | 7 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 208 |
| Measles | 109 | 61 | 48 | 57 | 48 | 17 | 45 | 33 | 7 | 3 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 | 105 |
| Smallpox | 264 | 133 | 131 | 105 | 108 | 52 | 44 | 66 | 34 | 3 | 14 | 22 | 16 | 7 | 6 | .. | .. | .. | .. | .. | .. | 51 | 213 |
| Syphilis | 21 | 13 | 8 | 12 | 4 | 11 | 4 | 1 | .. | .. | .. | 1 | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | 5 | 16 |
| Thrush or aphthæ | 4 | 2 | 2 | 2 | 2 | 3 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 |
| Varicella | 2 | .. | 2 | .. | 2 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| Total | 3506 | 2029 | 1477 | 1225 | 1182 | 787 | 538 | 608 | 278 | 52 | 144 | 494 | 231 | 133 | 106 | 65 | 48 | 20 | 1 | 1 | .. | 1099 | 2407 |

TABLE V.—*Zymotic, Epidemic, Endemic, and Contagious Diseases for* 1862—Continued.

Division 2. *Showing Location, Colour, Nativity, and Wards.*

| DISEASES. | ALMSHOUSE. | PEOPLE OF COLOUR. | COUNTRY. | NATIVITY. | | | WARDS. | | | | | | | | | | | | | | | | | | | | | | | | | UNKNOWN WARDS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | United States. | Foreign. | Unknown. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| Cholera | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " infantum | 2 | 20 | 10 | 623 | 5 | 1 | 64 | 37 | 26 | 22 | 11 | 13 | 41 | 16 | 9 | 17 | 20 | 19 | 14 | 18 | 30 | 25 | 32 | 18 | 54 | 43 | 13 | 13 | 16 | 28 | 12 | 8 |
| " morbus | .. | 3 | 3 | 33 | 21 | 4 | 4 | 7 | 2 | 3 | 2 | .. | 3 | 2 | 1 | 3 | 2 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 5 | 1 | 1 | 1 | 2 | 1 | 1 | .. |
| Diarrhœa | 39 | 12 | 14 | 243 | 65 | 109 | 15 | 24 | 9 | 14 | 9 | 5 | 17 | 5 | 6 | 15 | 8 | 6 | 4 | 2 | 11 | 22 | 14 | 23 | 39 | 15 | 9 | 2 | 10 | 112 | 6 | 1 |
| Diphtheria | .. | 6 | 16 | 299 | 13 | 13 | 11 | 16 | 7 | 12 | 13 | 9 | 15 | 11 | 12 | 12 | 6 | 14 | 10 | 19 | 22 | 5 | 9 | 12 | 26 | 15 | .. | 13 | 20 | 12 | 5 | 3 |
| Dysentery | 1 | 5 | 6 | 103 | 38 | 22 | 17 | 12 | 2 | 7 | 2 | 3 | 22 | 3 | 2 | 4 | 2 | 5 | 2 | 3 | 7 | 4 | 7 | 7 | 10 | 6 | 3 | 6 | 4 | 14 | .. | 3 |
| Erysipelas | 8 | 3 | 3 | 57 | 9 | 8 | 5 | 5 | 1 | 1 | 2 | 1 | 4 | 4 | 1 | 3 | 2 | 2 | 2 | 2 | 4 | 5 | 1 | 3 | 4 | 5 | .. | 1 | .. | 12 | .. | 1 |
| Fever, congestive | .. | .. | 1 | 4 | 3 | 2 | 1 | 1 | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | .. | .. | 1 | .. | .. |
| " intermittent | .. | 1 | 1 | 4 | 2 | 1 | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. |
| " eruptive | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " malignant | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| " remittent | 1 | 2 | 3 | 35 | 13 | 6 | 2 | 2 | 2 | .. | .. | 2 | 2 | 1 | 1 | 2 | 3 | .. | 2 | .. | 4 | 2 | 6 | 3 | 2 | 4 | 3 | 2 | 1 | 4 | 1 | .. |
| " scarlet | 7 | 7 | 17 | 440 | 3 | 18 | 30 | 30 | 22 | 19 | 14 | 9 | 36 | 19 | 10 | 13 | 7 | 9 | 15 | 23 | 44 | 12 | 17 | 19 | 22 | 20 | 6 | 46 | 2 | 38 | 2 | 2 |
| " typhoid | 3 | 16 | 68 | 396 | 127 | 135 | 34 | 34 | 11 | 17 | 14 | 12 | 45 | 12 | 7 | 48 | 11 | 41 | 18 | 13 | 25 | 25 | 17 | 20 | 51 | 42 | 17 | 8 | 16 | 42 | 8 | 2 |
| " typhus | .. | 1 | 1 | 22 | 15 | .. | .. | 4 | 3 | .. | 2 | .. | 1 | 1 | 1 | 1 | .. | 1 | .. | .. | 3 | .. | 3 | 2 | 8 | 4 | .. | .. | 1 | .. | .. | 1 |
| " yellow | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Hooping cough | .. | 19 | 7 | 204 | 1 | 3 | 4 | 12 | 7 | 10 | 12 | 7 | 16 | 10 | 3 | 8 | 3 | 2 | 7 | 11 | 10 | 2 | 15 | 7 | 15 | 18 | 5 | 7 | 3 | 6 | 1 | .. |
| Measles | 1 | 2 | 2 | 104 | 1 | 4 | 8 | 7 | 6 | 7 | 2 | 4 | 6 | 4 | 2 | 2 | 8 | 2 | 3 | 2 | 7 | 5 | 3 | 1 | 9 | 4 | .. | 1 | 9 | 5 | .. | .. |
| Smallpox | .. | 4 | 1 | 236 | 17 | 11 | 39 | 25 | 12 | 11 | 6 | 2 | 9 | 4 | 6 | 3 | 12 | 5 | 3 | 5 | 10 | 12 | 13 | 6 | 24 | 13 | 15 | 12 | 1 | 7 | 4 | 4 |
| Syphilis | 13 | 2 | .. | 14 | .. | 7 | 1 | .. | .. | 1 | 2 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | 14 | .. | .. |
| Thrush or aphthæ | .. | .. | 1 | 4 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Varicella | .. | .. | .. | 2 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Total | 75 | 103 | 155 | 2825 | 336 | 345 | 238 | 216 | 112 | 125 | 92 | 68 | 219 | 93 | 61 | 132 | 86 | 107 | 81 | 100 | 181 | 122 | 141 | 125 | 271 | 192 | 72 | 71 | 85 | 296 | 40 | |

There are, however, 526 of these deaths[1] that do not belong to our city mortality, having been brought here from the army. By deducting these, the deaths under this head will be reduced to 2980, or 1084 less than the former year, equal to 26.50 per cent.

To the total of deaths for the year, from all causes, these rate as 23 per cent., or one in every 4 and a third.

The falling off in the deaths from scarlet fever, smallpox, and diphtheria, has been 1050 from those in 1861.

This amount, however, has been made up in a great measure by the large increase of deaths from typhoid fever and diarrhœa. The former rose from 281, in 1861, to 658, and the latter from 183 to 417.

The heavy increase of mortality in these diseases can only be ascribed to deaths in the government hospitals, and to those brought here from the seat of war for interment.

The only disease named in this class, that has been increased in its mortality to any extent, over that of the former year, and cannot be attributed to foreign origin, has been hooping-cough, which has run up to 208 from 93. In every other disease, with the exception of those already named, there has been very little change.

Cholera infantum, as usual, has provided 629 deaths for the record, and unlike many other diseases where the deaths are distributed over the entire year, its mortality is confined to the three summer months of July, August, and September, at the same time selecting 327 or 50 per cent. of its innocent victims from the first, second, third, seventh, fifteenth, nineteenth and twentieth wards, which may be considered by far the most crowded and the most unsanitary sections of the city.

[1] The following catalogue has been obtained from the Registration Office. It gives the names of the diseases and casualties on the certificates of death of those soldiers of our army who have been buried in this city during the year 1862:—

| | | | | | |
|---|---|---|---|---|---|
| Typhoid fever, | 263 | Dropsy, | 9 | Inflammation of heart, | 1 |
| Wounds, gunshot, | 292 | Congestion of bowels, | 1 | Congestive fever, | 1 |
| Disease of the heart, | 11 | Tuberculosis, | 4 | Dyscrasia, | 1 |
| Peritonitis, | 7 | Congestion of lungs, | 1 | Erysipelas, | 4 |
| Diphtheria, | 16 | Disease of kidneys, | 2 | Scurvy, | 3 |
| Apoplexy, | 5 | Ossification of aortic valve, | 1 | Bronchitis, | 3 |
| Intermittent fever, | 2 | Compression of brain, | 1 | Cholera morbus, | 2 |
| Pleuro-pneumonia, | 9 | Abscess, | 4 | Marasmus, | 4 |
| Typhoid pneumonia, | 24 | Pleurisy, | 3 | Palsy, | 1 |
| Drowning, | 3 | Scarlet fever, | 1 | Hepatitis, | 1 |
| Consumption, | 88 | Rheumatism, | 1 | Larynx, | 1 |
| Brain fever, | 3 | Jaundice, | 1 | Concussion of brain, | 2 |
| Pneumonia, | 23 | Dysentery, | 40 | Gastric fever, | 1 |
| Inflammation of bowels, | 3 | Gangrene, | 6 | Parotitis, | 1 |
| Debility & exhaustion, | 34 | Tonsillitis, | 1 | Tetanus, | 1 |
| Convulsions, | 3 | Remittent fever, | 7 | Effusion on brain, | 1 |
| Ossification of arteries, | 1 | Disease of lungs, | 1 | Scrofula, | 1 |
| Inflammation of brain, | 6 | Pyemia, | 15 | Epilepsy, | 2 |
| Congestion of heart, | 1 | Bilious fever, | 1 | Murder, | 1 |
| Ulceration of bowels, | 4 | Falling from a window, | 1 | Scrofula, | 1 |
| Intemperance, | 3 | Diarrhœa, | 177 | Softening of the brain, | 2 |
| Dropsy of the chest, | 1 | Softening of brain, | 1 | Consumption of stomach, | 1 |
| Measles, | 3 | Accidents on railroad, | 13 | Trismus, | 1 |
| Variola, | 7 | Fever, pernicious, | 1 | Mania-a-potu, | 1 |
| Congestion of the brain, | 14 | Sunstroke, | 1 | | |
| Gastro-enteritis, | 8 | | | Total, | 1,202 |
| Unknown, | 35 | | | | |

Scarlet fever, smallpox, and diphtheria have prevailed during the year, but not to an alarming extent. During the first quarter, they furnished 437 deaths; in the second, 244; in the third, 154, and in the fourth, 215. These figures show a considerable decline in the second and third quarters, and although there was a slight increase in the fourth, they present a falling off of one-half from the first quarter. Smallpox fell off from 152 in the first quarter to 22 in the fourth. Scarlet fever, in the same period, from 189 to 92.

Diphtheria, however, appears to have increased during the last quarter. The first gave 96 deaths; the second, 56; the third, 72; while the fourth run up to 101.

TABLE A.—*Wards in which Zymotic or Epidemic Diseases were prevalent and deaths over* 150.

| WARDS. | Population. | Total deaths. | Deaths from zymotics. |
|---|---|---|---|
| 1 | 30,886 | 1037 | 238 |
| 2 | 29,123 | 827 | 216 |
| 7 | 31,264 | 829 | 219 |
| 15 | 32,091 | 819 | 181 |
| 19 | 38,828 | 1042 | 271 |
| 20 | 29,963 | 736 | 192 |
| 24 | 23,738 | 660[1] | 221 |
| | 215,893 | 5950 | 1538 |
| From country | | | 155 |
| | | | 1693 |

TABLE B.—*Wards in which Zymotic or Epidemic Diseases have not prevailed extensively, and where the deaths were under* 150.

| WARDS. | Population. | Total deaths. | Deaths from zymotics. |
|---|---|---|---|
| 3 | 19,929 | 491 | 112 |
| 4 | 23,461 | 711 | 125 |
| 5 | 24,792 | 520 | 92 |
| 6 | 14,882 | 350 | 68 |
| 8 | 27,770 | 465 | 93 |
| 9 | 17,196 | 338 | 61 |
| 10 | 21,849 | 599 | 132 |
| 11 | 16,681 | 384 | 86 |
| 12 | 16,681 | 429 | 107 |
| 13 | 20,045 | 380 | 81 |
| 14 | 24,258 | 493 | 100 |
| 16 | 20,067 | 520 | 122 |
| 17 | 23,264 | 677 | 141 |
| 18 | 20,441 | 596 | 125 |
| 21 | 17,159 | 284 | 72 |
| 22 | 17,173 | 286 | 71 |
| 23 | 23,985 | 329 | 85 |
| 25 | | 130 | 40 |
| Unknown | | 135 | 25 |
| | 349,643 | 8117 | 1738 |
| Almshouse | | | 75 |
| | | | 1813 |

The above tables have been prepared in order to furnish some idea of the healthy and unhealthy localities or wards in the city.

[1] Less those from almshouse 508.

In my last year's report I presented similar tables, in which the one marked A, analogous to that in this report, enumerated eleven wards, where deaths from epidemic diseases had exceeded one hundred and fifty. The table A, given above for 1862, recapitulates only six of these wards, the first, second, seventh, fifteenth, nineteenth and twentieth, to which I have added the twenty-fourth, where the deaths from zymotics were above one-hundred and fifty.

The decline of deaths from zymotic or preventable diseases in the remaining five of the eleven wards, as presented in table A, 1861, viz: the fourth, eleventh, sixteenth, seventeenth and eighteenth, may serve as an indication of the improved state of health in the city; nor have I any doubt, had it been practicable to have secured the deaths from zymotic diseases that have occurred in the government hospitals in our city, there being one in each of the above seven wards, and those that have been brought into the city from the seat of war and other places and buried from these wards, and deducted them from the total of deaths properly belonging to these wards, the figures would stand considerably below one hundred and fifty in each, making such a table unnecessary and effecting a sensible change in the index that pointed out these wards as the most unhealthy.

Table B embraces the remaining eighteen wards, together with the deaths from unknown wards. An average of the total of deaths in these eighteen sections—uniting the twenty-fifth and the unknown in one—will give 450 for each ward, while an average of the other seven wards makes the deaths 850 in each; thus showing the mortality to be nearly double. If we average the deaths from zymotic diseases in the seven wards, it returns 219 for each, and in the eighteen, the average will be 96 deaths.

This may not be the most accurate test of the health of one ward over another, as there may exist causes modifying unfavourably the mortality in one section over that of another, foreign to its sanitary condition, yet enough is learned to enable us to discriminate between the healthy and unhealthy districts.

The twenty-first, twenty-second and twenty-third wards, which are suburban, and to a large extent rural, furnished as high a rate of deaths from zymotic diseases as did several of the intramural wards with an equal population, and surrounded by far more adverse influences, incident to a residence in a crowded city. The cause of this mortality may be ascribed to the existence of malaria, which is to be found in most of the rural districts adjacent to our built up wards, where, during the autumnal season, there is abundance of decaying vegetable matter, together with numerous small sluggish streams of water and stagnant pools, on the unimproved lots, that create disease of an endemic character.

The fifth, eighth, ninth and twenty-third wards appear to have given only three deaths, from zymotic diseases, in every thousand of their population; the sixth, thirteenth, twenty-first and twenty-second wards contributed four in every thousand, while the remaining sixteen of the twenty-four, furnished a still higher proportion. It may, therefore, be assumed with entire safety, that the above named wards present a very favourable character for health, in comparison with other sections of the city. Three of them, it may be observed, are classed as rural districts.

The fact must not be overlooked that a large proportion of the deaths from this class of diseases, as a general rule, fall upon children and infants under five years of age. During the year under consideration, 1928 were

of this description, equal to 55 per cent. of the entire mortality. Of this number 784, or 22 per cent., were under one year of age.

The principal diseases of which these children died, were cholera infantum, diphtheria, diarrhœa, scarlet fever, hooping-cough, measles and smallpox.

Of this latter disease, there were in all 264 deaths, and of these 196, nearly two-thirds, were in children under ten years of age. This fact furnishes a strong appeal as to the necessity of an obligatory law for vaccination.

The deaths from smallpox were most numerous in the first, second, and nineteenth wards.

The deaths from diphtheria were distributed very generally through the city, except in the eleventh, sixteenth and twenty-first wards. The first two gave 6 and 5, but in the last named not a death is recorded.

Hooping-cough has prevailed to a greater extent during the year than usual. The first and the third quarters, the coldest and warmest seasons of the year, furnished the highest number of deaths.

The mortality for the year reached 208. This is the largest number of deaths that has ever been recorded in this city for any single year. In 1839 they reached 191, and in 1842, 197. Every other year, with the exception of 1844 and 1846, when they rose to 101 and 104, the mortality was quite small.

Measles has also been on the increase. The deaths having amounted to 109. Like diphtheria, the disease appears to have been very general through the city, if the deaths will serve as an index, but in the twenty-first, a rural ward, there is not a death recorded. There were four deaths in adults, three between 10 and 15 years, and the remainder under 10.

I have intentionally omitted the tables heretofore constructed, which designate the different varieties of sporadic diseases, and separate them into classes, according to the particular organs or parts of the system involved. In making minute investigations these tables are certainly useful, but as the diseases by name are to be found alphabetically arranged in the general table of deaths marked No. VI., they can be referred to for general purposes, and subdivided by those who take a special interest in mortality statistics.

In place of these classified divisions, I offer the following table of the most fatal sporadic causes of death which have occurred during the year, as well as during the previous year 1861. Inserting those causes only that rate above fifty in 1862, and comparing them with those of 1861.

*Deaths from Sporadic Causes in* 1862, *compared with those from similar causes in* 1861.

| | 1861. | 1862. | | 1861. | 1862. |
|---|---|---|---|---|---|
| Abscess | 47 | 52 | Gangrene | 46 | 55 |
| Apoplexy | 162 | 176 | Hemorrhage | 72 | 82 |
| Burns and scalds | 81 | 81 | Inflammation of Brain | 305 | 365 |
| Cancer (different varieties) | 189 | 181 | " of Bronchi | 138 | 116 |
| Casualties | 122 | 135 | " of Lungs | 681 | 749 |
| Croup | 304 | 258 | " of Peritoneum | 67 | 87 |
| Congestion of Brain | 275 | 324 | " of Stomach & Bowels | 238 | 306 |
| " of Lungs | 110 | 147 | Inanition | 124 | 125 |
| Convulsions | 636 | 703 | Intemperance | 29 | 82 |
| Consumption of the Lungs | 1817 | 1949 | Marasmus | 533 | 643 |
| Dropsy | 284 | 236 | Mania-à-Potu | 32 | 57 |
| " of Brain | 222 | 200 | Old Age | 203 | 219 |
| " of Chest | 63 | 55 | Palsy | 159 | 164 |
| Disease of Brain | 112 | 98 | Scrofula | 76 | 74 |
| " of Heart | 265 | 242 | Stillborn | 758 | 711 |
| Debility | 826 | 940 | Unknown | 104 | 97 |
| Drowned | 99 | 135 | Gunshot Wounds | 21 | 292 |
| Effusion of Brain | 73 | 69 | | | |

With few exceptions it will be observed that there is a degree of uniformity in the deaths from various causes, and this order is not peculiar to these two periods, it may be seen in the mortality of one year with another, in our own bills of mortality, likewise in those of other cities for a succession of years, and is only disturbed by an increase or decrease of the population.

The most marked inequality in any one cause between these two years is presented in that of gun-shot wounds, which figures 292 in 1862, and only 21 in 1861, which at that time was considered an extraordinary number. It needs no argument to prove from whence came this remarkable increase.

Another exception is that of debility, in which there is an increase of 110 in 1862, as also of consumption of the lungs, 132 ; intemperance, 53 ; inflammation of the lungs, 68 ; inflammation of the brain, 60 ; congestion of the brain, 40. Many of these may be traced directly to the record of causes for deaths among soldiers.

The similarity, as shown in this table, between the causes of death for the two years is remarkable in apoplexy, burns and scalds, casualties, diseases of the brain, debility, effusion of brain, inanition, old age, palsy, scrofula, cancer, and unknown.

The proportion of deaths by consumption to those of other diseases, has been one in 7½, and the percentage to all other deaths 12.71.

To the population, estimating it at 600,000, they were as one in every 308.

The excess of deaths is with females. The most prevalent age for deaths from consumption is between twenty and thirty. It carried off in 1862 in this decennial 608 persons. More than one-half of all the deaths occurred between the ages of fifteen and forty.

The first, second, fourth, seventh, tenth, fifteenth, nineteenth and twentieth wards are charged with 881 deaths from consumption, more than one-half the entire mortality, and these wards are with but one exception the tenth among the most unfavourable for health.

The almshouse furnished 124 deaths, and the coloured population is set down for 149 deaths from consumption.

The mortality assigned to debility, intemperance, mania-a-potu and in-

flammation of the brain, have all increased more or less, while on the other hand croup, dropsy (general and of the brain and chest), and disease of the heart have shown a moderate decline.

There are to be found certain variations in the mortality record for 1862 from that of 1861, and even of earlier years, which depend in some measure upon the rebellion and its results, that are deserving of a passing notice. They are as follows :—

1. The increase in the annual aggregate of deaths, without the prevalence of any unusual epidemic.

2. The unusual mortality among males, as compared with those of females, equal to 23 per cent., and presenting an excess more than double the usual number.

3. The limited proportion of deaths of minors or children to those of adults, not over 14 per cent. The previous year they exceeded 64 per cent.

4. The astonishing increase in the deaths from gun-shot wounds. From 21 of the preceding year to 292 !

5. The increased mortality from typhoid fever, amounting to 658, or 477 above those of 1861, equal to 170 per cent. The excess in all probability was from the deaths of soldiers.

6. The falling off in the deaths from scarlet fever, smallpox, and diphtheria, when compared with those for 1861, amounting in the aggregate to 1397, or 57 per cent.

7. The unusual annual increase in the deaths from consumption of the lungs and debility. The former amounting to 132 or 7 per cent., and the latter to 112 or 13 per cent.

8. The large number of the remains of soldiers brought into our city for interment, amounting to 1202, causing our rate of mortality to appear higher by 4 per cent. than belongs to it.

9. The organization of 22 government hospitals in our city, where there have been treated during the year 20,336 sick and wounded soldiers from the seat of war, thus swelling our list of city deaths—one for every death in these hospitals amounting to 700.

**TABLE VI.**—*Interments in the City of Philadelphia from December 28, 1861, to January 3, 1863.*

Division 1. *Mortality classified according to Sex and Age.*

| DISEASES. | TOTAL. | SEX. | | | | AGES. | | | | | | | | | | | | | | ADULTS. | MINORS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80 | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | | |
| Abortion | 3 | 2 | 1 | 2 | 1 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| Abscess | 52 | 30 | 22 | 7 | 4 | 2 | 2 | 2 | 2 | 1 | 2 | 9 | 11 | 9 | 4 | 6 | 1 | .. | 1 | .. | .. | 41 | 11 |
| Albuminuria | 10 | 85 | 5 | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | 2 | 1 | 1 | 2 | 1 | 1 | .. | .. | .. | 9 | 1 |
| Anæmia | 20 | 12 | 8 | 8 | 4 | 9 | .. | 2 | .. | 1 | .. | 2 | 1 | .. | 3 | 1 | 1 | .. | .. | .. | .. | 8 | 12 |
| Aneurism | 13 | 11 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | 5 | 2 | 3 | .. | .. | .. | .. | .. | 13 | .. |
| Anthrax | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| Angina pectoris | 11 | 8 | 3 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | 3 | 5 | 1 | .. | .. | .. | .. | 10 | 1 |
| Amputation | 4 | 4 | .. | 2 | .. | .. | .. | .. | 1 | .. | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 2 |
| Aphthæ | 4 | 2 | 2 | 2 | 2 | 3 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 |
| Apoplexy | 176 | 93 | 83 | 6 | 3 | 2 | .. | 1 | .. | .. | 6 | 9 | 12 | 30 | 33 | 39 | 34 | 10 | .. | .. | .. | 167 | 9 |
| Asphyxia | 35 | 18 | 17 | 16 | 14 | 28 | .. | 2 | .. | .. | .. | 1 | 1 | 1 | 1 | .. | 1 | .. | .. | .. | .. | 5 | 30 |
| Asthma | 24 | 15 | 9 | 4 | 1 | 2 | 1 | 1 | 1 | .. | .. | .. | .. | .. | 6 | 3 | 9 | 1 | .. | .. | .. | 19 | 5 |
| Burns and scalds | 81 | 38 | 43 | 25 | 34 | 3 | 7 | 27 | 9 | 3 | 10 | 9 | 7 | 2 | 1 | 1 | 2 | .. | .. | .. | .. | 22 | 59 |
| Cancer | 70 | 28 | 42 | 2 | 2 | 1 | .. | .. | 2 | .. | 1 | 3 | 7 | 15 | 16 | 14 | 8 | 3 | .. | .. | .. | 66 | 4 |
| " of the breast | 12 | .. | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | 2 | 5 | 2 | .. | .. | .. | .. | 12 | .. |
| " " chest | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. |
| " " heart | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| " " neck | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. |
| " " ovaries | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| " " stomach & bowels | 65 | 31 | 34 | 5 | .. | .. | 2 | 3 | .. | .. | .. | 2 | 4 | 11 | 15 | 17 | 8 | 3 | .. | .. | .. | 60 | 5 |
| " " uterus | 30 | .. | 30 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5 | 6 | 17 | 2 | .. | .. | .. | .. | .. | 30 | .. |
| Casualties | 135 | 116 | 19 | 36 | 7 | 1 | 3 | 9 | 9 | 7 | 14 | 29 | 17 | 15 | 17 | 8 | 4 | 2 | .. | .. | .. | 92 | 43 |
| Croup | 258 | 137 | 121 | 134 | 119 | 31 | 53 | 133 | 33 | 1 | 2 | 1 | .. | .. | 1 | 2 | 1 | .. | .. | .. | .. | 5 | 253 |
| Congestion | 3 | 2 | 1 | 2 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 2 |
| " of the brain | 324 | 169 | 155 | 103 | 116 | 77 | 47 | 49 | 28 | 9 | 9 | 23 | 28 | 20 | 13 | 11 | 8 | 2 | .. | .. | .. | 105 | 219 |
| " " bowels | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " " heart | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 2 | .. |
| " " liver | 10 | 5 | 5 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | 1 | 2 | .. | 3 | 3 | .. | .. | .. | .. | 9 | 1 |
| " " lungs | 147 | 83 | 64 | 53 | 40 | 42 | 17 | 15 | 12 | 3 | 4 | 7 | 9 | 7 | 6 | 12 | 11 | 1 | 1 | .. | .. | 54 | 93 |
| Convulsions | 703 | 361 | 342 | 339 | 324 | 395 | 115 | 119 | 28 | 6 | .. | 11 | 13 | 7 | 4 | 3 | 2 | .. | .. | .. | .. | 40 | 663 |
| " puerperal | 46 | .. | 46 | .. | 3 | .. | .. | .. | .. | .. | 3 | 24 | 16 | 3 | .. | .. | .. | .. | .. | .. | .. | 43 | 3 |
| Consumption of bowels | 23 | 10 | 13 | 6 | 5 | 2 | 3 | 1 | 1 | .. | 4 | 3 | 4 | 1 | 1 | 1 | 1 | 1 | .. | .. | .. | 12 | 11 |
| " lungs | 1949 | 961 | 988 | 124 | 169 | 45 | 27 | 36 | 32 | 26 | 127 | 608 | 445 | 269 | 172 | 103 | 51 | 8 | .. | .. | .. | 1656 | 293 |
| Carbuncle | 5 | 3 | 2 | .. | 2 | .. | 1 | 1 | .. | .. | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 3 | 2 |
| Compression of the brain | 11 | 6 | 5 | 2 | 2 | 1 | .. | 1 | 1 | 1 | .. | 1 | 2 | .. | 1 | 2 | 1 | .. | .. | .. | .. | 7 | 4 |
| Cyanosis | 40 | 25 | 15 | 25 | 15 | 39 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 240 |
| Cirrhosis | 15 | 9 | 6 | 1 | 1 | 1 | .. | .. | 1 | .. | .. | .. | 1 | 5 | 3 | 3 | 1 | .. | .. | .. | .. | 13 | |

TABLE VI.—*Interments in the City of Philadelphia during* 1862—Continued.

Division 1. *Mortality classified according to Sex and Age.*

| DISEASES. | TOTAL. | SEX. | | | | AGES. | | | | | | | | | | | | | | ADULTS. | MINORS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | | |
| Concussion of the brain | 13 | 11 | 2 | 4 | 2 | 1 | .. | .. | 2 | 1 | 2 | 3 | 1 | 1 | .. | 2 | .. | .. | .. | .. | .. | 7 | 6 |
| Cholera asphyxia | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " infantum | 629 | 321 | 308 | 321 | 308 | 428 | 170 | 31 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 629 |
| " morbus | 58 | 26 | 32 | 6 | 5 | 4 | 3 | .. | 1 | 3 | .. | 4 | 8 | 4 | 6 | 10 | 12 | 3 | .. | .. | .. | 47 | 11 |
| Cramps | 17 | 9 | 8 | 9 | 7 | 13 | .. | 1 | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 16 |
| Caries of spine | 6 | 3 | 3 | 2 | 2 | .. | .. | .. | 2 | 2 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 4 |
| " bones of the face | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Chicken-pox | 2 | .. | 2 | .. | 2 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| Contusion of chest | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| Colic | 6 | 3 | 3 | 1 | 2 | 2 | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | 3 | 3 |
| Coxalgia | 7 | 3 | 4 | 1 | 4 | .. | .. | .. | 1 | 2 | 2 | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 2 | 5 |
| Constipation | 2 | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 |
| Coryza | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Coup de soleil | 24 | 22 | 2 | 1 | .. | .. | .. | 1 | .. | .. | .. | 4 | 7 | 7 | 1 | 4 | .. | .. | .. | .. | .. | 23 | 1 |
| Diphtheria | 325 | 152 | 173 | 132 | 169 | 26 | 54 | 125 | 77 | 10 | 9 | 15 | 5 | 1 | 2 | .. | 1 | .. | .. | .. | .. | 24 | 301 |
| Dropsy | 236 | 96 | 140 | 35 | 21 | 4 | 2 | 25 | 12 | 8 | 5 | 12 | 27 | 23 | 33 | 40 | 27 | 15 | 3 | .. | .. | 180 | 56 |
| " abdominal | 26 | 13 | 13 | 1 | .. | .. | .. | .. | 1 | .. | .. | 2 | 6 | 4 | 4 | 6 | 3 | .. | .. | .. | .. | 25 | 1 |
| " of the brain | 200 | 100 | 100 | 98 | 99 | 97 | 56 | 37 | 3 | 3 | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | 3 | 197 |
| " " chest | 55 | 34 | 21 | 10 | 4 | .. | 1 | 5 | 5 | 3 | .. | 6 | 4 | 4 | 13 | 6 | 7 | .. | 1 | .. | .. | 41 | 14 |
| " " heart | 45 | 24 | 21 | 5 | 7 | 1 | .. | 4 | 2 | 3 | 2 | 3 | 5 | 5 | 6 | 6 | 7 | 1 | .. | .. | .. | 33 | 12 |
| " " ovaries | 4 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | 1 | .. | .. | .. | .. | 4 | .. |
| " " stomach | 3 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. | .. | .. | 3 | .. |
| Disease of the brain | 98 | 48 | 50 | 28 | 35 | 21 | 15 | 17 | 5 | 2 | 3 | 7 | 6 | 5 | 6 | 5 | 5 | 1 | .. | .. | .. | 35 | 63 |
| " " bladder | 7 | 6 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | 1 | 3 | .. | .. | .. | .. | 7 | .. |
| " " chest | 5 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 2 | 1 | .. | .. | .. | .. | .. | .. | 5 | .. |
| " " heart | 242 | 123 | 119 | 30 | 20 | 12 | 5 | 7 | 5 | 8 | 13 | 28 | 22 | 38 | 29 | 39 | 31 | 4 | 1 | .. | .. | 192 | 50 |
| " " kidneys | 31 | 17 | 14 | 1 | 1 | .. | .. | .. | .. | .. | 2 | 5 | 4 | 6 | 3 | 5 | 6 | .. | .. | .. | .. | 29 | 2 |
| " " lungs | 20 | 10 | 10 | 2 | 7 | 3 | 1 | 3 | 1 | .. | 1 | 2 | 2 | 1 | 3 | 2 | 1 | .. | .. | .. | .. | 11 | 9 |
| " " liver | 43 | 24 | 19 | 1 | 2 | .. | 1 | .. | 1 | .. | 1 | 1 | 9 | 8 | 12 | 5 | 5 | .. | .. | .. | .. | 40 | 3 |
| " " spine | 22 | 6 | 16 | 4 | 12 | 6 | .. | 1 | 5 | 2 | 2 | .. | 2 | 1 | 1 | 2 | .. | .. | .. | .. | .. | 6 | 16 |
| " " glands | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| " " stomach & bowels | 15 | 10 | 5 | 3 | 1 | 3 | .. | 1 | .. | .. | .. | 1 | .. | .. | 2 | 4 | 4 | .. | .. | .. | .. | 11 | 4 |
| " " skin | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " " throat | 9 | 2 | 7 | 2 | 5 | 1 | 2 | 2 | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 2 | 7 |
| " " uterus | 4 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | 1 | .. | .. | .. | .. | 4 | .. |
| Diarrhœa | 417 | 302 | 115 | 65 | 52 | 61 | 23 | 14 | 6 | .. | 13 | 133 | 54 | 31 | 38 | 20 | 15 | 8 | .. | 1 | .. | 300 | 117 |
| Debility | 940 | 487 | 453 | 225 | 181 | 330 | 25 | 25 | 10 | 7 | 9 | 49 | 74 | 60 | 55 | 96 | 118 | 69 | 12 | .. | 1 | 534 | 406 |

TABLE VI.—*Interments in the City of Philadelphia during* 1862—Continued.

Division 1. *Mortality classified according to Sex and Age.*

| DISEASES. | TOTAL. | SEX. | | | | AGES. | | | | | | | | | | | | | | ADULTS. | MINORS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | | |
| Dysentery | 163 | 98 | 65 | 43 | 31 | 20 | 38 | 9 | 3 | 1 | 3 | 22 | 30 | 13 | 6 | 8 | 6 | 4 | .. | .. | .. | 89 | 74 |
| Drowned | 135 | 118 | 17 | 47 | 11 | 1 | .. | 4 | 20 | 17 | 16 | 18 | 27 | 22 | 7 | 3 | .. | .. | .. | .. | .. | 77 | 58 |
| Diabetes | 10 | 5 | 5 | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | 4 | 1 | 1 | 1 | 1 | .. | .. | .. | .. | 9 | 1 |
| Dyspepsia | 2 | 1 | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 |
| Dislocation of spine | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. |
| Dysuria | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Effusion of the brain | 69 | 43 | 26 | 32 | 24 | 21 | 19 | 12 | 2 | .. | 2 | 3 | 1 | 2 | 5 | .. | 2 | .. | .. | .. | .. | 13 | 56 |
| " " lungs | 6 | 2 | 4 | 1 | 4 | .. | 2 | 1 | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 5 |
| Epilepsy | 28 | 19 | 9 | .. | 3 | .. | .. | .. | 1 | 1 | 1 | 11 | 7 | 4 | 2 | .. | .. | 1 | .. | .. | .. | 25 | 3 |
| Erysipelas | 74 | 42 | 32 | 25 | 21 | 26 | 5 | 7 | 3 | 3 | 2 | 6 | 5 | 5 | 5 | 3 | 2 | 2 | .. | .. | .. | 28 | 46 |
| Emphysema of lungs | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | 2 | .. |
| Enlargement of the heart | 5 | 2 | 3 | .. | 1 | .. | .. | .. | 1 | .. | .. | 2 | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | 4 | 1 |
| " " liver | 5 | 4 | 1 | 1 | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | 4 | 1 |
| " " prostate gland | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. |
| Exposure | 4 | 3 | 1 | 3 | .. | 1 | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 3 |
| Empyema | 1 | .. | 1 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Ecthyma | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Fever | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| " bilious | 23 | 15 | 8 | 4 | 2 | 1 | .. | .. | 1 | 1 | 3 | 6 | 5 | 3 | 3 | .. | .. | .. | .. | .. | .. | 17 | 6 |
| " brain | 18 | 11 | 7 | 4 | 7 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | .. | .. | .. | .. | .. | .. | .. | 7 | 11 |
| " congestive | 8 | 7 | 1 | 1 | .. | .. | 1 | .. | .. | .. | .. | 2 | 2 | 1 | 1 | .. | 1 | .. | .. | .. | .. | 7 | 1 |
| " camp | 4 | 4 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | 1 |
| " catarrh | 2 | 1 | 1 | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 |
| " eruptive | 1 | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| " gastric | 7 | 3 | 4 | 1 | 2 | .. | 2 | 1 | .. | .. | .. | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | 4 | 3 |
| " hectic | 4 | 2 | 2 | .. | 2 | 2 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 2 | 2 |
| " intermittent | 7 | 4 | 3 | .. | 2 | 1 | 1 | .. | .. | .. | .. | 3 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 5 | 2 |
| " puerperal | 23 | .. | 23 | .. | .. | .. | .. | .. | .. | .. | .. | 8 | 13 | 2 | .. | .. | .. | .. | .. | .. | .. | 23 | .. |
| " rheumatic | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " malignant | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. |
| " remittent | 24 | 9 | 15 | 3 | 11 | 1 | 3 | 6 | 2 | .. | 2 | 5 | .. | .. | 1 | 3 | .. | 1 | .. | .. | .. | 10 | 14 |
| " scarlet | 461 | 222 | 239 | 220 | 236 | 35 | 82 | 228 | 101 | 8 | 2 | 3 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 5 | 456 |
| " typhoid | 654 | 486 | 168 | 113 | 71 | 2 | 7 | 36 | 31 | 18 | 90 | 255 | 90 | 59 | 34 | 19 | 10 | 2 | 1 | .. | .. | 470 | 184 |
| " typhus | 37 | 18 | 19 | 7 | 5 | .. | .. | 3 | 5 | 1 | 3 | 5 | 9 | 7 | 3 | 1 | .. | .. | .. | .. | .. | 25 | 12 |
| " yellow | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. |
| Fracture of the arm | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. |
| " " leg | 8 | 8 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | 3 | .. | 2 | 2 | .. | .. | .. | .. | .. | 7 | 1 |

TABLE VI.—*Interments in the City of Philadelphia during* 1862—Continued.

Division 1. *Mortality classified according to Sex and Age.*

| DISEASES. | TOTAL. | SEX. | | | | AGES. | | | | | | | | | | | | | | ADULTS. | MINORS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | | |
| Fracture of the skull | 11 | 9 | 2 | 2 | 1 | .. | .. | 1 | 1 | .. | 1 | 3 | .. | 4 | 1 | .. | .. | .. | .. | .. | .. | 8 | 3 |
| " " shoulder | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " " thigh | 6 | 6 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 3 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 5 | 1 |
| " " pelvis | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| Fistula | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | 2 | .. |
| Fatty degeneration of heart | 3 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | 3 | .. |
| " " kidneys | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. |
| " " liver | 2 | 2 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 |
| Gangrene | 55 | 27 | 28 | 6 | 9 | 3 | 4 | 3 | 2 | 1 | 2 | 6 | 1 | 5 | 6 | 9 | 8 | 5 | .. | .. | .. | 40 | 15 |
| Gout | 5 | 4 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 2 | .. | 1 | .. | .. | 5 | .. |
| Gravel | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | 2 | .. |
| Hernia | 14 | 8 | 6 | 3 | .. | 3 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 7 | 3 | .. | .. | .. | .. | 11 | 3 |
| Hydrophobia | 4 | 3 | 1 | 2 | 1 | .. | .. | 1 | 2 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 3 |
| Hooping-cough | 208 | 105 | 103 | 105 | 103 | 98 | 55 | 46 | 7 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 208 |
| Hemorrhage | 82 | 48 | 34 | 17 | 18 | 13 | 4 | 7 | 4 | 5 | 2 | 12 | 11 | 5 | 7 | 6 | 4 | 2 | .. | .. | .. | 47 | 35 |
| " of the lungs | 21 | 11 | 10 | 1 | 2 | 1 | .. | .. | .. | 1 | 1 | 4 | 9 | 1 | 2. | 1 | 1 | .. | .. | .. | .. | 18 | 3 |
| " kidneys | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. |
| " stomach & bowels | 8 | 5 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 2 | .. | 3 | .. | 1 | .. | .. | .. | 8 | .. |
| " uterus | 13 | .. | 13 | .. | .. | .. | .. | .. | .. | .. | .. | 5 | 5 | 2 | .. | .. | 1 | .. | .. | .. | .. | 13 | .. |
| Inflammation | 6 | 1 | 5 | 1 | 3 | 1 | 1 | 2 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 2 | 4 |
| " of brain | 365 | 218 | 147 | 180 | 138 | 91 | 78 | 89 | 39 | 15 | 6 | 10 | 14 | 17 | 2 | 2 | 2 | .. | .. | .. | .. | 47 | 318 |
| " bronchi | 116 | 57 | 59 | 37 | 29 | 34 | 20 | 10 | 1 | .. | 1 | 3 | 8 | 8 | 7 | 12 | 7 | 5 | .. | .. | .. | 50 | 66 |
| " breast | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " bladder | 15 | 10 | 5 | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | 2 | .. | 4 | 2 | 5 | .. | .. | .. | .. | 14 | 1 |
| " chest | 1 | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| " ear | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " heart | 28 | 19 | 9 | 3 | 1 | .. | .. | 1 | 3 | .. | .. | 9 | 6 | 2 | 2 | .. | 4 | 1 | .. | .. | .. | 24 | 4 |
| " kidneys | 5 | 4 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 2 | 1 | .. | .. | 1 | .. | .. | 5 | .. |
| " lungs | 749 | 413 | 336 | 241 | 241 | 212 | 115 | 117 | 22 | 6 | 10 | 64 | 46 | 44 | 33 | 41 | 27 | 12 | .. | .. | .. | 267 | 482 |
| " liver | 38 | 18 | 20 | .. | 2 | .. | .. | 2 | .. | .. | .. | 4 | 6 | 12 | 7 | 4 | 2 | 1 | .. | .. | .. | 36 | 2 |
| " larynx | 22 | 8 | 14 | 6 | 9 | 4 | 5 | 5 | 1 | .. | .. | 2 | 3 | .. | 1 | .. | 1 | .. | .. | .. | .. | 7 | 15 |
| " peritoneum | 87 | 41 | 46 | 13 | 8 | 5 | 2 | 4 | 1 | 5 | 4 | 20 | 18 | 7 | 9 | 6 | 3 | 3 | .. | .. | .. | 66 | 21 |
| " prostate gland | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| " pleura | 20 | 14 | 6 | 4 | .. | 2 | .. | 1 | 1 | .. | .. | 7 | 1 | 1 | 1 | 2 | 1 | 3 | .. | .. | .. | 16 | 4 |
| " parotid glands | 5 | 2 | 3 | 1 | 3 | 1 | .. | 2 | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 4 |
| " pharynx | 1 | 1 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| " stomach & bowels | 306 | 148 | 158 | 72 | 73 | 64 | 32 | 24 | 15 | 6 | 4 | 34 | 31 | 31 | 25 | 22 | 13 | 5 | .. | .. | .. | 161 | 145 |

**Table VI.**—*Interments in the City of Philadelphia during* 1862—Continued.

Division 1. *Mortality classified according to Sex and Age.*

| DISEASES. | Total. | SEX. | | | | AGES. | | | | | | | | | | | | | | Adults. | Minors. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | | |
| Inflammation of spine | 7 | 5 | 2 | 5 | 1 | .. | 1 | 1 | 4 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 6 |
| " spleen | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " throat | 1 | .. | 1 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| " tonsils | 1 | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| " uterus | 7 | .. | 7 | .. | .. | .. | .. | .. | .. | .. | .. | 3 | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | 7 | .. |
| " veins | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| Inanition | 125 | 73 | 52 | 51 | 39 | 77 | 2 | 3 | 1 | 1 | 6 | 14 | 6 | 3 | 3 | 3 | 6 | .. | .. | .. | .. | 35 | 90 |
| Insanity | 8 | 3 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 2 | 3 | 1 | .. | .. | .. | .. | .. | 8 | .. |
| Jaundice | 27 | 13 | 14 | 4 | 7 | 8 | 1 | 1 | 1 | .. | .. | 1 | 3 | 5 | 2 | 4 | .. | 1 | .. | .. | .. | 16 | 11 |
| Intemperance and exposure | 82 | 45 | 37 | .. | .. | .. | .. | .. | .. | .. | .. | 14 | 34 | 23 | 6 | 4 | 1 | .. | .. | .. | .. | 82 | .. |
| Icterus | 6 | 1 | 5 | .. | 5 | 4 | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 5 |
| Leucocythemia | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| Marasmus | 643 | 356 | 287 | 328 | 264 | 326 | 150 | 90 | 21 | 5 | .. | 4 | 6 | 5 | 7 | 16 | 11 | 1 | .. | 1 | .. | 51 | 592 |
| Measles | 109 | 61 | 48 | 57 | 48 | 17 | 45 | 33 | 7 | 3 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 | 105 |
| Mania a potu | 57 | 46 | 11 | .. | .. | .. | .. | .. | .. | .. | .. | 8 | 17 | 20 | 10 | .. | 2 | .. | .. | .. | .. | 57 | .. |
| Malformation | 20 | 13 | 7 | 13 | 7 | 19 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 20 |
| Metastasis | 1 | .. | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Melanosis | 2 | .. | 2 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 |
| Neuralgia | 10 | 4 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 2 | 2 | 2 | 1 | 1 | .. | .. | .. | 10 | .. |
| Neglect | 1 | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Neurosis | 5 | 2 | 3 | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | 4 | 1 |
| Necrosis | 2 | 1 | 1 | .. | 1 | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 |
| Old age | 219 | 69 | 150 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 | 10 | 57 | 105 | 39 | 4 | .. | 219 | .. |
| Obstruction of the bowels | 24 | 10 | 14 | 6 | 1 | 5 | .. | .. | .. | 2 | .. | 2 | 3 | 4 | .. | 2 | 1 | .. | .. | .. | .. | 17 | 7 |
| Overdose of ether | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| Ossification of the heart | 8 | 5 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 2 | 2 | 1 | 2 | .. | .. | .. | 8 | .. |
| " " aorta | 4 | 3 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 2 | .. | 1 | .. | .. | .. | 4 | .. |
| Œdema of the glottis | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| Palsy | 164 | 74 | 90 | 4 | .. | .. | .. | 1 | 2 | .. | 1 | 5 | 9 | 15 | 26 | 30 | 51 | 17 | 7 | .. | .. | 160 | 4 |
| Pyæmia | 29 | 26 | 3 | 4 | .. | 1 | .. | .. | .. | .. | 3 | 16 | 5 | 1 | 2 | .. | 1 | .. | .. | .. | .. | 25 | 4 |
| Purpura | 6 | 4 | 2 | 2 | 1 | 1 | .. | 1 | 1 | .. | .. | .. | 2 | .. | 1 | .. | .. | .. | .. | .. | .. | 3 | 3 |
| Poisoning | 6 | 4 | 2 | 2 | 2 | 2 | .. | .. | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | 2 | 4 |
| Rupia | 1 | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Rheumatism | 20 | 11 | 9 | 4 | .. | .. | .. | 1 | .. | 1 | 2 | 5 | 2 | 2 | 2 | 4 | 1 | .. | .. | .. | .. | 16 | 4 |
| Rupture | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| " of the uterus | 3 | .. | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | 3 | .. |
| " " aorta | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | 2 | .. |

TABLE VI.—*Interments in the City of Philadelphia during* 1862—Continued.

Division 1. *Mortality classified according to Sex and Age.*

| DISEASES. | TOTAL. | SEX. | | | | AGES. | | | | | | | | | | | | | | | ADULTS. | MINORS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | | |
| Scrofula | 74 | 44 | 30 | 39 | 27 | 16 | 15 | 15 | 11 | 3 | 6 | 4 | 1 | 2 | .. | .. | 1 | ... | .. | .. | .. | 8 | 66 |
| Smallpox | 264 | 133 | 131 | 105 | 108 | 52 | 44 | 66 | 34 | 3 | 14 | 22 | 16 | 7 | 6 | .. | .. | .. | .. | .. | .. | 51 | 213 |
| Softening of the brain | 43 | 26 | 17 | 3 | 2 | .. | 2 | 1 | .. | .. | 2 | 2 | 10 | 5 | 8 | 5 | 6 | 2 | .. | .. | .. | 38 | 5 |
| " " heart | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. |
| Stillborn | 711 | 414 | 297 | 414 | 297 | 711 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 711 |
| Syphilis | 21 | 13 | 8 | 12 | 4 | 11 | 4 | 1 | .. | .. | .. | 1 | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | 5 | 16 |
| Suicide | 14 | 11 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 3 | 7 | .. | 3 | .. | .. | .. | .. | .. | 14 | .. |
| Suffocation | 13 | 8 | 5 | 3 | 5 | 5 | .. | 1 | 2 | .. | .. | 1 | .. | 2 | 2 | .. | .. | .. | .. | .. | .. | 5 | 8 |
| Stricture of the œsophagus | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| " " pylorus | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. |
| " " glottis | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Strangulation | 3 | 3 | .. | 3 | .. | 1 | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| Suffocating catarrh | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. |
| Syncope | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| Scurvy | 5 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 5 | .. |
| Tumours | 21 | 2 | 19 | .. | 1 | .. | .. | .. | 1 | .. | .. | 5 | 4 | 3 | 3 | 3 | 2 | .. | .. | .. | .. | 20 | 1 |
| Tympanitis | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 2 | .. |
| Tetanus | 27 | 19 | 8 | 11 | 6 | 4 | 1 | .. | 5 | 3 | 4 | 3 | 2 | 2 | 1 | 1 | 1 | .. | .. | .. | .. | 10 | 17 |
| Teething | 41 | 23 | 18 | 23 | 18 | 20 | 20 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 41 |
| Unknown | 97 | 71 | 26 | 15 | 14 | 22 | 3 | 1 | 1 | 1 | 1 | 32 | 12 | 9 | 2 | 5 | 5 | 3 | .. | .. | .. | 68 | 20 |
| Ulceration | 6 | 2 | 4 | 1 | 1 | 1 | .. | .. | 1 | .. | .. | .. | 1 | 1 | 1 | 1 | .. | .. | .. | .. | .. | 4 | 2 |
| " of the bowels | 21 | 13 | 8 | 2 | 4 | 1 | 2 | 1 | .. | 1 | 1 | .. | 5 | 7 | 2 | 1 | .. | .. | .. | .. | .. | 15 | 6 |
| " " bladder | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| " " larynx | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " " stomach | 3 | 2 | 1 | 2 | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 2 |
| " " throat | 4 | 2 | 2 | 1 | 1 | .. | .. | .. | 2 | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 2 | 2 |
| Violence | 7 | 6 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | 2 | 1 | 1 | .. | .. | .. | .. | .. | 7 | .. |
| Wounds | 3 | 2 | 1 | 2 | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | 2 |
| " gunshot | 292 | 292 | .. | 42 | .. | .. | .. | 1 | .. | .. | 41 | 192 | 40 | 14 | 3 | 1 | .. | .. | .. | .. | .. | 250 | 42 |
| Worms | 3 | 1 | 2 | 1 | 2 | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 |
| Total | 15097 | 8315 | 6782 | 4266 | 3772 | 3661 | 1410 | 1555 | 679 | 233 | 500 | 1928 | 1408 | 1046 | 843 | 777 | 666 | 316 | 68 | 6 | 1 | 7059 | 8038 |

## TABLE VI.—*Interments in the City of Philadelphia during* 1862—Continued.

Division 2. *Mortality classified according to Colour, Nativity, and Wards.*

| DISEASES. | ALMSHOUSE. | PEOPLE OF COLOUR. | COUNTRY. | NATIVITY. | | | WARDS. | | | | | | | | | | | | | | | | | | | | | | UNKNOWN WARDS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | United States. | Foreign. | Unknown. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| Abortion | .. | .. | .. | 3 | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. |
| Abscess | 4 | 2 | 3 | 30 | 14 | 8 | 2 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 3 | 1 | 2 | 1 | .. | 1 | 1 | 1 | 1 | 1 | 3 | .. | .. | .. | 9 | .. | .. |
| Albuminuria | 2 | .. | .. | 6 | 2 | 2 | .. | 1 | 1 | .. | 2 | .. | .. | 1 | .. | .. | .. | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. |
| Anæmia | .. | .. | 1 | 15 | 4 | 1 | 2 | 2 | .. | .. | 2 | .. | 1 | 1 | 2 | .. | 1 | 2 | .. | .. | 1 | .. | .. | 3 | 1 | .. | .. | .. | 1 | .. | .. | .. |
| Aneurism | 2 | .. | .. | 4 | 7 | 2 | .. | 1 | .. | .. | .. | .. | 2 | .. | .. | 1 | 1 | .. | 1 | .. | 1 | .. | 1 | 1 | 1 | .. | .. | .. | 1 | 2 | .. | .. |
| Anthrax | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Angina pectoris | .. | 1 | 1 | 6 | 5 | .. | 2 | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | 2 | 2 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Amputation | 1 | .. | .. | 3 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 2 | .. | .. |
| Aphthæ | .. | .. | 1 | 4 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Apoplexy | 10 | 5 | 11 | 80 | 82 | 14 | 11 | 10 | 3 | 4 | 4 | 4 | 7 | 7 | 5 | 6 | 7 | 7 | 1 | 7 | 6 | 6 | 9 | 9 | 8 | 9 | 5 | 3 | 9 | 17 | 1 | .. |
| Asphyxia | .. | .. | .. | 32 | 2 | 1 | 3 | 5 | 1 | 2 | .. | 1 | 2 | .. | 2 | 1 | 1 | .. | 2 | .. | .. | 2 | 2 | 4 | 1 | 3 | 1 | .. | 1 | 1 | .. | .. |
| Asthma | .. | .. | .. | 10 | 14 | .. | 3 | .. | 1 | 3 | .. | 2 | .. | .. | .. | 1 | .. | .. | 1 | 4 | .. | 2 | 3 | 1 | 1 | .. | .. | .. | 1 | 1 | .. | .. |
| Burns and scalds | 3 | 1 | 2 | 62 | 13 | 6 | 11 | 6 | 4 | 5 | 6 | 2 | 5 | 1 | 3 | 3 | 1 | 2 | 2 | .. | 5 | 1 | 1 | 2 | 2 | 4 | 2 | .. | 1 | 7 | 1 | 2 |
| Cancer | 9 | 3 | 1 | 34 | 25 | 11 | 6 | 4 | 1 | .. | 2 | .. | 3 | 1 | 3 | 3 | 5 | 4 | 4 | 5 | 3 | 3 | 3 | 2 | 3 | 1 | 1 | 1 | 1 | 10 | .. | .. |
| " of the breast | .. | 1 | .. | 10 | 2 | .. | .. | 1 | 1 | .. | .. | 1 | .. | 1 | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. | 2 | .. | 1 | 1 | 1 | .. | .. | .. | .. |
| " " chest | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " " heart | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " " neck | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| " " ovaries | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " " stomach & bowels | 7 | 3 | 2 | 27 | 32 | 6 | .. | .. | 2 | 3 | 1 | 1 | 8 | 3 | 1 | 1 | .. | 4 | 1 | 4 | 6 | 3 | 8 | 5 | .. | .. | .. | 1 | 3 | 8 | .. | .. |
| " " uterus | 2 | 2 | 1 | 15 | 13 | 2 | 2 | 4 | 1 | .. | .. | .. | 8 | 1 | .. | .. | .. | .. | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 2 | .. | .. | .. | 2 | .. | .. |
| Casualties | .. | 2 | 14 | 67 | 55 | 13 | 14 | 11 | 2 | 12 | 1 | 1 | 8 | 7 | 3 | 3 | 4 | .. | 3 | 5 | 9 | 5 | 2 | 1 | 3 | 4 | 6 | 3 | 4 | 6 | 2 | 2 |
| Croup | 2 | 4 | 9 | 249 | 4 | 5 | 19 | 18 | 10 | 9 | 2 | 7 | 10 | 6 | 4 | 6 | 13 | 6 | 9 | 8 | 13 | 10 | 19 | 14 | 17 | 13 | 9 | 4 | 9 | 9 | 5 | .. |
| Congestion | .. | .. | .. | 3 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " of the brain | 7 | 10 | 10 | 259 | 52 | 13 | 31 | 25 | 15 | 21 | 6 | 10 | 8 | 11 | 4 | 6 | 6 | 10 | 9 | 8 | 17 | 8 | 19 | 10 | 41 | 10 | 5 | 5 | 8 | 13 | 5 | 3 |
| " " bowels | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| " " heart | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| " " liver | 1 | 1 | .. | 2 | 6 | 2 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | 3 | 1 | .. | .. | .. | 1 | .. | .. |
| " " lungs | .. | 6 | 6 | 121 | 23 | 3 | 13 | 5 | 2 | 6 | 6 | 7 | 7 | 8 | 3 | 4 | 3 | 6 | 1 | 4 | 7 | 7 | 8 | 6 | 8 | 11 | 1 | 6 | 3 | 5 | 3 | 1 |
| Convulsions | 7 | 36 | 6 | 673 | 18 | 12 | 40 | 48 | 25 | 47 | 21 | 25 | 30 | 13 | 12 | 19 | 21 | 24 | 19 | 25 | 41 | 29 | 38 | 24 | 78 | 37 | 9 | 10 | 20 | 26 | 3 | 13 |
| " puerperal | 2 | .. | 1 | 22 | 21 | 3 | 3 | 2 | 2 | 1 | .. | 1 | 4 | 1 | 2 | 3 | .. | 1 | .. | 1 | 2 | 3 | 2 | .. | 6 | 3 | 3 | .. | 1 | 4 | .. | .. |
| Consumption of bowels | .. | 1 | 1 | 15 | 6 | 2 | 1 | 2 | 1 | 1 | .. | .. | 2 | .. | 1 | 2 | 1 | .. | .. | .. | 1 | 2 | .. | 1 | 2 | 2 | 1 | .. | 1 | 1 | .. | .. |
| " lungs | 124 | 149 | 47 | 1127 | 630 | 192 | 125 | 108 | 55 | 92 | 77 | 41 | 118 | 66 | 45 | 95 | 41 | 46 | 46 | 76 | 117 | 54 | 72 | 69 | 125 | 101 | 27 | 38 | 33 | 198 | 14 | 23 |
| Carbuncle | .. | .. | .. | 4 | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. |
| Compression of the brain | .. | 2 | 1 | 6 | 4 | 1 | 1 | .. | 1 | .. | .. | .. | 3 | 2 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Cyanosis | .. | 2 | 1 | 40 | .. | .. | 4 | 3 | 1 | 5 | 2 | .. | 1 | 3 | 1 | 2 | .. | .. | 2 | 2 | 1 | 1 | .. | 3 | 1 | .. | 2 | 3 | .. | .. | .. | 1 |
| Cirrhosis | 2 | .. | .. | 9 | 4 | 2 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | 1 | .. | 1 | 2 | .. | 1 | 2 | 1 | 1 | 1 | 1 | .. | .. | .. | 2 | .. | .. |

**Table VI.**—*Interments in the City of Philadelphia during* 1862—Continued.

Division 2. *Mortality classified according to Colour, Nativity, and Wards.*

| DISEASES. | Almshouse. | People of colour. | Country. | Nativity. | | | Wards. | | | | | | | | | | | | | | | | | | | | | | | Unknown Wards. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | United States. | Foreign. | Unknown. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| Concussion of the brain | 1 | 1 | 1 | 5 | 6 | 2 | .. | 1 | 1 | 1 | .. | 1 | .. | .. | 1 | 1 | 2 | 2 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Cholera asphyxia | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " infantum | 2 | 20 | 10 | 623 | 5 | 1 | 64 | 37 | 26 | 22 | 11 | 13 | 41 | 16 | 9 | 17 | 20 | 19 | 14 | 18 | 30 | 25 | 32 | 18 | 54 | 43 | 13 | 13 | 16 | 28 | 12 | 8 |
| " morbus | .. | 3 | 3 | 33 | 21 | 4 | 4 | 7 | 2 | 3 | 2 | .. | 3 | 2 | 1 | 3 | 2 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 5 | 1 | 1 | 1 | 2 | 1 | 1 | .. |
| Cramps | .. | .. | .. | 16 | 1 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 2 | 1 | 3 | 1 | .. | .. | .. | 3 | 3 | 2 | .. | .. | .. | .. | .. | .. | .. |
| Caries of spine | .. | .. | .. | 4 | 1 | 1 | 1 | .. | 1 | 1 | .. | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " bones of the face | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. |
| Chicken-pox | .. | .. | .. | 2 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Contusion of chest | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Colic | .. | .. | .. | 4 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | 2 | .. | .. | .. | .. |
| Coxalgia | 2 | .. | .. | 3 | 2 | 2 | .. | .. | .. | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | 2 | .. | .. |
| Constipation | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| Coryza | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Coup de soleil | .. | .. | 3 | 4 | 17 | 3 | 3 | .. | 2 | .. | 2 | 2 | 1 | 2 | .. | .. | 2 | .. | .. | 1 | .. | .. | 1 | .. | 3 | 1 | 1 | .. | .. | .. | .. | .. |
| Diphtheria | .. | 6 | 16 | 299 | 13 | 13 | 11 | 16 | 7 | 12 | 13 | 9 | 15 | 11 | 12 | 12 | 6 | 14 | 10 | 19 | 22 | 5 | 9 | 12 | 26 | 15 | .. | 13 | 20 | 12 | 5 | 3 |
| Dropsy | 5 | 21 | 5 | 154 | 73 | 9 | 12 | 14 | 5 | 11 | 7 | 6 | 11 | 7 | 5 | 11 | 13 | 5 | 9 | 14 | 8 | 11 | 14 | 11 | 7 | 13 | 7 | 3 | 6 | 18 | 1 | 2 |
| " abdominal | .. | .. | .. | 10 | 16 | .. | 7 | 1 | 1 | 1 | 1 | 1 | 1 | .. | .. | 1 | 1 | .. | .. | 1 | 1 | .. | 1 | 2 | 2 | .. | .. | .. | 1 | 3 | .. | .. |
| " of the brain | 3 | 9 | 3 | 194 | 3 | 3 | 11 | 11 | 2 | 5 | 4 | 3 | 5 | 5 | .. | 10 | 4 | 7 | 10 | 7 | 17 | 5 | 10 | 11 | 16 | 17 | 6 | 5 | 9 | 13 | 2 | 2 |
| " " chest | .. | 2 | 1 | 42 | 12 | 1 | 1 | 4 | 2 | 2 | 2 | .. | .. | 1 | 1 | 2 | 2 | .. | 3 | 4 | 5 | 2 | 4 | 6 | 5 | 2 | 1 | 1 | 3 | 1 | .. | .. |
| " " heart | 2 | 4 | 5 | 31 | 11 | 3 | 3 | 1 | 4 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 1 | .. | 1 | 1 | 3 | 1 | .. | 2 | 3 | 1 | 1 | 1 | 1 | 3 | 1 | .. |
| " " ovaries | .. | .. | .. | 4 | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " " stomach | .. | .. | .. | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Disease of the brain | 1 | 3 | 4 | 80 | 15 | 3 | 3 | 3 | 1 | 3 | 4 | 3 | 1 | 5 | 3 | 3 | 4 | 3 | 3 | 5 | 22 | 2 | 2 | 1 | 2 | 10 | 2 | 1 | 1 | 6 | 1 | .. |
| " " bladder | 1 | .. | .. | 2 | 4 | 1 | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| " " chest | .. | .. | 2 | 3 | 2 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " " heart | 4 | 13 | 18 | 151 | 72 | 19 | 10 | 11 | 8 | 10 | 10 | 6 | 10 | 8 | 3 | 14 | 7 | 4 | 14 | 13 | 19 | 7 | 7 | 4 | 14 | 11 | 6 | 9 | 7 | 11 | .. | 1 |
| " " kidneys | 3 | 3 | 1 | 13 | 14 | 4 | 2 | .. | .. | 3 | 1 | .. | 1 | 3 | 1 | 1 | .. | .. | .. | 2 | 2 | .. | .. | 1 | 4 | 2 | 1 | .. | .. | 6 | .. | .. |
| " " lungs | 1 | 2 | 1 | 13 | 6 | 1 | .. | .. | 1 | 2 | 1 | .. | .. | 2 | 2 | .. | 2 | .. | .. | .. | 4 | .. | 1 | 1 | .. | .. | 1 | .. | .. | 2 | .. | .. |
| " " liver | .. | .. | 2 | 14 | 28 | 1 | 4 | 1 | .. | 1 | 1 | 2 | .. | 1 | 2 | 1 | 3 | 2 | .. | .. | 3 | 2 | 5 | 1 | 3 | 6 | 2 | .. | 1 | .. | .. | .. |
| " " spine | .. | 1 | 2 | 20 | 2 | .. | .. | .. | .. | 2 | 1 | .. | 3 | 1 | .. | 2 | .. | 1 | 1 | .. | 1 | .. | .. | 1 | 2 | 2 | 1 | 1 | .. | 1 | .. | .. |
| " " glands | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " " sto'ch & bowels | .. | .. | .. | 7 | 8 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | 1 | 2 | .. | .. | 3 | .. | 2 | 1 | .. | .. | .. | .. | 1 | 2 | .. | .. |
| " " skin | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " " throat | .. | .. | .. | 9 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | 1 | 2 | 1 | .. | 1 | .. | .. | .. |
| " " uterus | .. | .. | 1 | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. |
| Diarrhœa | 39 | 12 | 14 | 243 | 65 | 109 | 15 | 24 | 9 | 14 | 9 | 5 | 17 | 5 | 6 | 15 | 8 | 6 | 4 | 2 | 11 | 22 | 14 | 23 | 39 | 15 | 9 | 2 | 10 | 12 | 6 | 1 |
| Debility | 37 | 74 | 14 | 617 | 242 | 81 | 74 | 45 | 35 | 80 | 48 | 21 | 49 | 25 | 19 | 26 | 27 | 21 | 16 | 35 | 41 | 32 | 45 | 51 | 65 | 34 | 18 | 23 | 11 | 64 | 10 | 11 |

## TABLE VI.—*Interments in the City of Philadelphia during* 1862—Continued.

Division 2. *Mortality classified according to Colour, Nativity, and Wards.*

| DISEASES. | ALMSHOUSE. | PEOPLE OF COLOUR. | COUNTRY. | NATIVITY. | | | WARDS. | | | | | | | | | | | | | | | | | | | | | | | | UNKNOWN WARDS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | United States. | Foreign. | Unknown. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| Dysentery | 1 | 5 | 6 | 103 | 38 | 22 | 17 | 12 | 2 | 7 | 2 | 3 | 22 | 3 | 2 | 4 | 2 | 5 | 2 | 3 | 7 | 4 | 7 | 7 | 10 | 6 | 3 | 6 | 4 | 14 | .. | 3 |
| Drowned | .. | 6 | 12 | 71 | 36 | 28 | 9 | 6 | 12 | 5 | 12 | 4 | 9 | .. | 2 | 5 | 7 | 1 | 1 | 4 | 2 | 5 | 6 | 5 | 6 | 3 | 3 | .. | 3 | 5 | 5 | 3 |
| Diabetes | .. | 1 | .. | 9 | 1 | .. | 3 | .. | .. | .. | .. | 2 | .. | 1 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Dyspepsia | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. |
| Dislocation of spine | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. |
| Dysuria | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Effusion of the brain | 2 | 3 | 5 | 59 | 3 | 7 | 7 | 4 | 4 | 10 | 2 | .. | 6 | 1 | 4 | 3 | 4 | 2 | 3 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | .. | 3 | .. | 1 | .. | 1 |
| " " lungs | .. | 1 | .. | 6 | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. |
| Epilepsy | 3 | 1 | 2 | 17 | 7 | 4 | 1 | 1 | .. | 1 | 1 | 2 | 2 | 3 | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | 3 | 1 | .. | 1 | .. | 6 | 1 | .. |
| Erysipelas | 8 | 3 | 3 | 57 | 9 | 8 | 5 | 5 | 1 | 1 | 2 | 1 | 4 | 4 | 1 | 3 | 2 | 2 | 2 | 2 | 4 | 5 | 1 | 3 | 4 | 5 | .. | 1 | .. | 12 | .. | 1 |
| Emphysema of lungs | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. |
| Enlargement of heart | .. | .. | .. | 3 | 2 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " liver | .. | .. | .. | 3 | 2 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | .. | .. | 1 | .. | .. | .. |
| " prostate gland | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Exposure | 1 | .. | .. | 3 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 2 | .. | .. |
| Empyemia | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Ecthyma | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Fever | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. |
| " bilious | 1 | 1 | .. | 12 | 8 | 3 | 1 | 1 | .. | .. | .. | 1 | 1 | .. | .. | 1 | 2 | .. | 2 | .. | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 3 | .. | .. | .. |
| " brain | .. | .. | 4 | 17 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | 3 | .. | .. | 4 | .. | 1 | .. | .. | 1 | 1 | 1 | .. |
| " congestive | .. | .. | 1 | 3 | 3 | 2 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | .. | .. | 1 | .. | .. |
| " camp | .. | .. | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " catarrh | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " eruptive | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " gastric | .. | .. | .. | 5 | 2 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | 1 | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. |
| " hectic | .. | .. | .. | 3 | 1 | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. |
| " intermittent | .. | 1 | 1 | 4 | 2 | 1 | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. |
| " puerperal | .. | .. | .. | 7 | 16 | .. | 1 | 6 | 2 | .. | .. | .. | .. | 2 | 2 | .. | .. | .. | 1 | 2 | .. | 1 | 2 | .. | 2 | .. | .. | 1 | .. | 1 | .. | .. |
| " rheumatic | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| " malignant | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| " remittent | .. | 1 | 3 | 18 | 3 | 3 | 1 | 1 | 1 | .. | .. | 1 | 1 | 1 | 1 | .. | .. | .. | .. | .. | 2 | .. | 4 | 2 | 1 | 2 | 1 | 1 | .. | 1 | .. | .. |
| " scarlet | 7 | 7 | 17 | 440 | 3 | 18 | 30 | 30 | 22 | 19 | 14 | 9 | 36 | 19 | 10 | 13 | 7 | 9 | 15 | 23 | 44 | 12 | 17 | 19 | 22 | 20 | 6 | 4 | 2 | 38 | 2 | 2 |
| " typhoid | 3 | 16 | 68 | 392 | 127 | 135 | 34 | 34 | 11 | 17 | 14 | 12 | 45 | 10 | 7 | 48 | 11 | 41 | 18 | 13 | 25 | 25 | 17 | 20 | 51 | 41 | 17 | 8 | 16 | 41 | 8 | 2 |
| " typhus | .. | 1 | 1 | 22 | 15 | .. | .. | 4 | 3 | .. | 2 | .. | 1 | 1 | 1 | 1 | .. | 1 | .. | .. | 3 | .. | 3 | 2 | 8 | 4 | .. | .. | 1 | .. | .. | 1 |
| " yellow | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Fracture of the arm | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| " " leg | .. | 1 | .. | 1 | 7 | .. | 1 | .. | .. | .. | .. | .. | 3 | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |

## TABLE VI.—*Interments in the City of Philadelphia during* 1862—Continued.

Division 2. *Mortality classified according to Colour, Nativity, and Wards.*

| DISEASES. | ALMSHOUSE. | PEOPLE OF COLOUR. | COUNTRY. | NATIVITY. | | | WARDS. | | | | | | | | | | | | | | | | | | | | | | | | UNKNOWN WARDS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | United States. | Foreign. | Unknown | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| Fracture of skull | .. | .. | 1 | 4 | 5 | 2 | .. | .. | .. | 1 | 1 | 1 | 1 | .. | .. | 2 | .. | .. | .. | .. | .. | 1 | .. | . | 3 | .. | .. | .. | .. | .. | .. | .. |
| " shoulder | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " thigh | .. | .. | .. | 3 | 1 | 2 | .. | .. | .. | .. | 1 | .. | 1 | 1 | .. | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " pelvis | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Fistula | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Fatty degeneration of heart | .. | .. | .. | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| " " kidneys | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| " " liver | 1 | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Gangrene | 5 | 4 | 1 | 36 | 10 | 9 | 3 | 1 | 1 | 2 | 4 | 2 | 1 | 4 | .. | 6 | .. | 1 | 4 | 1 | 2 | 2 | 1 | .. | 3 | 3 | 1 | 4 | 1 | 6 | 1 | .. |
| Gout | 1 | .. | .. | 3 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Gravel | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. |
| Hernia | .. | .. | 1 | 8 | 6 | .. | .. | 2 | 2 | 1 | .. | 1 | 3 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. |
| Hydrophobia | .. | .. | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. |
| Hooping-cough | .. | 19 | 7 | 204 | 1 | 3 | 4 | 12 | 7 | 10 | 12 | 7 | 16 | 10 | 3 | 8 | 3 | 2 | 7 | 11 | 10 | 2 | 15 | 7 | 15 | 18 | 5 | 7 | 3 | 6 | 1 | .. |
| Hemorrhage | 1 | 1 | 2 | 50 | 27 | 5 | 9 | 4 | 2 | 3 | 1 | .. | 5 | 3 | 2 | 4 | 2 | 1 | 4 | 2 | 11 | 3 | 10 | 1 | 5 | 2 | 1 | 1 | 1 | 3 | .. | .. |
| " of lungs | .. | 1 | 1 | 16 | 5 | .. | 3 | .. | 1 | .. | 1 | .. | 2 | .. | 2 | .. | .. | .. | 1 | 3 | 3 | .. | 1 | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. |
| " kidneys | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " stomach & bowels | .. | .. | 1 | 6 | 2 | .. | .. | 1 | .. | 2 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " uterus | .. | .. | 1 | 7 | 6 | .. | 1 | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | 1 | 1 | .. | 3 | 1 | .. | .. | .. | .. | .. |
| Inflammation | 1 | .. | .. | 4 | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | 1 | 1 | .. | .. |
| " brain | 9 | 15 | 7 | 334 | 16 | 15 | 31 | 26 | 17 | 20 | 11 | 8 | 19 | 14 | 11 | 8 | 13 | 9 | 6 | 7 | 26 | 16 | 20 | 12 | 21 | 12 | 4 | 11 | 9 | 20 | 2 | 5 |
| " bronchi | 3 | 12 | 1 | 89 | 21 | 6 | 8 | 4 | 3 | 5 | 5 | 6 | 9 | 9 | 6 | 2 | 4 | 3 | 3 | 6 | 6 | 5 | 7 | 2 | 3 | 5 | 4 | 4 | 1 | 5 | .. | .. |
| " breast | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| " bladder | 1 | 2 | 1 | 5 | 9 | 1 | .. | 1 | 1 | 2 | 1 | .. | 2 | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 3 | .. | .. |
| " chest | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " ear | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " heart | 1 | .. | .. | 17 | 9 | 2 | 1 | 1 | 3 | 2 | .. | .. | 1 | 1 | 1 | .. | 1 | 3 | 1 | .. | 3 | 1 | 2 | .. | 1 | 2 | .. | 1 | .. | 2 | .. | 1 |
| " kidneys | 1 | .. | .. | 1 | 3 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 3 | .. | .. |
| " lungs | 26 | 49 | 19 | 538 | 113 | 48 | 62 | 44 | 27 | 30 | 36 | 16 | 49 | 30 | 19 | 36 | 10 | 15 | 13 | 12 | 36 | 28 | 25 | 38 | 49 | 28 | 21 | 21 | 14 | 62 | 7 | 2 |
| " liver | 1 | 1 | 1 | 19 | 17 | 2 | 3 | 2 | 1 | .. | .. | 1 | 3 | 3 | 1 | 1 | 2 | .. | .. | 3 | 1 | 3 | .. | 2 | 3 | 1 | 1 | 1 | 2 | 2 | .. | 1 |
| " larynx | 3 | .. | .. | 16 | 3 | 3 | .. | 2 | .. | 1 | .. | 1 | .. | 2 | .. | .. | 1 | 1 | 4 | 1 | 2 | .. | .. | .. | .. | 2 | .. | .. | 1 | 4 | .. | .. |
| " peritoneum | 6 | 4 | .. | 40 | 36 | 11 | 11 | 1 | 4 | 4 | 4 | 2 | 5 | 3 | 5 | 10 | 1 | 1 | 5 | 2 | 5 | 1 | 3 | 3 | 4 | 5 | .. | 1 | .. | 7 | .. | .. |
| " prostate gland | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " pleura | 3 | 1 | .. | 13 | 5 | 2 | 1 | 2 | .. | .. | .. | .. | 3 | .. | .. | 4 | 1 | .. | .. | 1 | 1 | .. | 1 | .. | 1 | 1 | 1 | .. | .. | 3 | .. | .. |
| " parotid glands | .. | 1 | .. | 4 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| " pharynx | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " stomach & bowels | 7 | 14 | 11 | 219 | 69 | 18 | 24 | 10 | 9 | 17 | 13 | 6 | 22 | 6 | 6 | 10 | 8 | 6 | 7 | 7 | 13 | 13 | 17 | 18 | 23 | 18 | 8 | 5 | 7 | 19 | 1 | 3 |

## TABLE VI.—*Interments in the City of Philadelphia during* 1862—Continued.

Division 2. *Mortality classified according to Colour, Nativity, and Wards.*

| DISEASES. | ALMSHOUSE. | PEOPLE OF COLOUR. | COUNTRY. | NATIVITY. | | | WARDS. | | | | | | | | | | | | | | | | | | | | | | | UNKNOWN WARDS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | United States. | Foreign. | Unknown. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| Inflammation of spine | .. | .. | .. | 6 | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " spleen | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " throat | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " tonsils | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " uterus | .. | .. | .. | 2 | 5 | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. |
| " veins | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Inanition | 10 | 5 | 5 | 93 | 10 | 22 | 10 | 11 | 4 | 5 | 1 | 1 | 4 | 4 | 1 | 12 | 2 | 1 | 5 | 8 | 2 | 3 | 4 | .. | 13 | 3 | .. | 3 | 1 | 21 | 1 | .. |
| Insanity | .. | .. | 1 | 6 | 1 | 1 | .. | .. | .. | .. | .. | .. | 1 | 2 | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| Jaundice | .. | .. | .. | 18 | 8 | 1 | 4 | .. | 1 | 1 | .. | .. | 2 | .. | 1 | 1 | .. | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 2 | .. | .. |
| Intemperance and exposure | 1 | 10 | 1 | 4 | 11 | 67 | 4 | 1 | 13 | 17 | 8 | 4 | 1 | 1 | 1 | 2 | 1 | .. | .. | 1 | 1 | 1 | 4 | .. | 3 | 1 | .. | .. | 1 | 9 | 1 | 6 |
| Icterus | .. | .. | .. | 5 | 1 | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| Leucocythemia | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Marasmus | 34 | 29 | 4 | 592 | 28 | 23 | 41 | 31 | 17 | 30 | 21 | 12 | 37 | 20 | 21 | 9 | 11 | 15 | 11 | 11 | 32 | 32 | 51 | 49 | 62 | 27 | 15 | 15 | 14 | 52 | 2 | 1 |
| Measles | 1 | 2 | 2 | 104 | 1 | 4 | 8 | 7 | 6 | 7 | 2 | 4 | 6 | 4 | 2 | 2 | 8 | 2 | 3 | 2 | 7 | 5 | 3 | 1 | 9 | 4 | .. | 1 | 9 | 5 | .. | .. |
| Mania à potu | 6 | .. | 1 | 19 | 27 | 11 | 8 | 1 | 1 | .. | 4 | 1 | 5 | 2 | .. | 1 | 2 | 2 | 1 | 5 | 3 | 2 | 2 | 1 | 2 | 3 | .. | .. | .. | 8 | .. | 2 |
| Malformation | .. | 1 | 1 | 20 | .. | .. | 1 | .. | .. | 3 | 2 | 1 | .. | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. | .. | 1 | 2 | 1 | .. | .. | 2 | 2 | .. | 1 |
| Metastasis | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. |
| Melanosis | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Neuralgia | .. | 1 | .. | 9 | .. | 1 | 2 | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | 2 | .. | .. | .. |
| Neglect | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Neurosis | .. | .. | .. | 4 | 1 | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Necrosis | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Old age | 5 | 9 | 6 | 112 | 99 | 8 | 12 | 13 | 6 | 6 | 11 | 5 | 6 | 8 | 8 | 21 | 4 | 6 | 8 | 13 | 11 | 7 | 6 | 12 | 10 | 18 | 2 | 1 | 4 | 14 | 1 | .. |
| Obstruction of the bowels | 1 | .. | .. | 19 | 5 | .. | 1 | 1 | .. | .. | .. | .. | 1 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | .. | 2 | .. | .. | 1 | .. | 1 | 1 | 1 |
| Overdose of ether | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| Ossification of the heart | 1 | .. | .. | 3 | 4 | 1 | .. | 2 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | 2 | .. | .. |
| " " aorta | .. | .. | .. | 3 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. |
| Œdema of the glottis | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Palsy | 5 | 3 | 8 | 106 | 45 | 13 | 11 | 9 | 5 | 6 | 9 | 4 | 7 | 3 | 9 | 7 | 7 | 3 | 7 | 7 | 9 | 6 | 2 | 4 | 5 | 8 | 2 | 7 | 3 | 11 | 4 | 1 |
| Pyæmia | 5 | .. | .. | 11 | 7 | 11 | 1 | 1 | 1 | 1 | .. | .. | 3 | .. | 1 | 2 | .. | 1 | .. | 1 | .. | 1 | .. | 1 | 1 | 1 | .. | 1 | 1 | 11 | .. | .. |
| Purpura | .. | .. | .. | 4 | 2 | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Poisoning | .. | .. | .. | 5 | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. |
| Rupia | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Rheumatism | .. | .. | 1 | 8 | 10 | 2 | .. | 1 | 1 | .. | .. | .. | 2 | .. | .. | 2 | 1 | 2 | .. | 1 | 2 | .. | 2 | 1 | 1 | 1 | .. | 1 | .. | .. | .. | .. |
| Rupture | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. |
| " of the uterus | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 |
| " " aorta | 1 | 1 | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. |

**TABLE VI.**—*Interments in the City of Philadelphia during* 1862—Concluded.

Division 2. *Mortality classified according to Colour, Nativity, and Wards.*

| DISEASES. | ALMSHOUSE. | PEOPLE OF COLOUR. | COUNTRY. | NATIVITY. | | | WARDS. | | | | | | | | | | | | | | | | | | | | | | | | | UNKNOWN WARDS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | United States. | Foreign. | Unknown | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| Scrofula | 12 | 9 | 1 | 57 | 6 | 11 | 4 | 7 | 2 | 4 | 3 | 1 | 3 | 3 | .. | 2 | .. | 2 | 1 | 1 | 2 | 1 | 2 | 4 | 4 | 7 | 1 | 1 | 3 | 15 | .. | .. |
| Smallpox | .. | 4 | 1 | 236 | 17 | 11 | 39 | 25 | 12 | 11 | 6 | 2 | 9 | 4 | 6 | 3 | 12 | 5 | 3 | 5 | 10 | 12 | 13 | 6 | 24 | 13 | 15 | 12 | 1 | 7 | 4 | 4 |
| Softening of the brain | 2 | .. | 2 | 29 | 7 | 7 | 3 | 3 | 1 | 5 | 3 | .. | 4 | 1 | 2 | 4 | .. | .. | 1 | 1 | 1 | 1 | 1 | .. | 2 | 1 | .. | 1 | 3 | 3 | .. | .. |
| " " heart | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Stillborn | .. | 54 | 4 | 709 | .. | 2 | 56 | 40 | 25 | 44 | 31 | 28 | 31 | 17 | 17 | 21 | 19 | 25 | 16 | 22 | 51 | 26 | 47 | 30 | 52 | 34 | 11 | 7 | 12 | 24 | 5 | 16 |
| Syphilis | 13 | 2 | .. | 14 | .. | 7 | 1 | .. | .. | 1 | 2 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | 14 | .. | .. |
| Suicide | .. | .. | .. | 6 | 6 | 2 | 1 | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | 3 | 1 | 1 | 1 | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 3 | .. | .. |
| Suffocation | .. | 2 | .. | 9 | 3 | 1 | 1 | .. | .. | 1 | 1 | .. | 2 | .. | .. | .. | 1 | 1 | .. | .. | 2 | .. | .. | .. | .. | 2 | .. | 1 | .. | 1 | .. | .. |
| Stricture of œsophagus | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " pyloris | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. |
| " glottis | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Strangulation | .. | .. | .. | 3 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. |
| Suffocating catarrh | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Syncope | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Scurvy | .. | .. | .. | 2 | .. | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5 | .. | .. | .. | .. | .. | .. | .. |
| Tumours | 1 | 2 | 2 | 11 | 8 | 2 | 1 | 1 | .. | .. | .. | .. | .. | 2 | .. | 1 | 2 | .. | 1 | .. | 4 | .. | 1 | 1 | 2 | .. | .. | .. | .. | 2 | 1 | .. |
| Tympanitis | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. |
| Tetanus | 1 | 2 | 1 | 21 | 4 | 2 | 3 | 2 | 1 | 2 | .. | .. | 3 | 1 | .. | 1 | .. | 1 | 1 | 1 | .. | .. | 2 | .. | 3 | 2 | 2 | .. | .. | 1 | .. | .. |
| Teething | .. | 1 | 1 | 41 | .. | .. | 2 | 4 | .. | 2 | .. | 1 | 4 | 2 | .. | .. | 2 | 1 | 2 | .. | 2 | 2 | 2 | 3 | 8 | 2 | 1 | .. | .. | .. | .. | .. |
| Unknown | 15 | 3 | 20 | 41 | 11 | 42 | 5 | .. | .. | 1 | 5 | 2 | 3 | 2 | 2 | 2 | 1 | 1 | .. | 2 | 1 | 3 | 6 | 2 | 3 | 4 | .. | .. | .. | 31 | .. | 1 |
| Ulceration | 4 | 1 | .. | 2 | .. | 4 | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 | .. | .. |
| " of the bowels | 4 | .. | 1 | 8 | 7 | 6 | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 3 | .. | .. | 2 | 3 | .. | 1 | .. | 1 | 7 | .. | .. |
| " " bladder | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " " larynx | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| " " stomach | 2 | .. | .. | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. |
| " " throat | .. | .. | .. | 3 | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Violence | .. | .. | .. | 2 | 4 | 1 | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. |
| Wounds | .. | 1 | .. | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. |
| " gunshot | .. | .. | 54 | 162 | 60 | 70 | 12 | 7 | 0 | 3 | 5 | 8 | 15 | 3 | 8 | 21 | 4 | 36 | 8 | 12 | 14 | 17 | 6 | 4 | 6 | 19 | 6 | 1 | 3 | 6 | 2 | 3 |
| Worms | .. | 1 | .. | 3 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Total | 508 | 721 | 522 | 11059 | 2762 | 1276 | 1037 | 827 | 491 | 711 | 520 | 350 | 829 | 465 | 338 | 590 | 384 | 429 | 380 | 493 | 819 | 520 | 677 | 596 | 1042 | 736 | 284 | 286 | 329 | 1168 | 130 | 135 |

| | | |
|---|---|---|
| Total number of deaths reported for 1862 | | 15,097 |
| White | 14,376 | |
| Coloured | 721 | |
| Total | | 15,097 |
| Males | 8,315 | |
| Females | 6,782 | |
| Total | | 15,097 |
| From which deduct stillborn | | 711 |
| | | 14,386 |

| | | |
|---|---|---|
| The number of male adults | 4,049 | |
| " " female adults | 3,010 | |
| " " male children | 4,266 | |
| " " female children | 3,772 | |
| | | 15,097 |
| Deduct stillborn males | 414 | |
| " " females | 297 | |
| | | 711 |
| | | 14,386. |

In Twenty-fourth Ward deduct deaths in Philadelphia Almshouse, 508.
Net deaths in Twenty-fourth Ward, 660.

*April* 1. *Spotted Fever, occurring in the vicinity of Philadelphia in the year* 1863. *Symptoms, Pathology, and Diagnosis.* Dr. W. W. GERHARD read the following account of this fever:—

About the middle of last February I was called to a case of a new form of disease; the patient, a boy of sixteen years of age, was taken suddenly with intense pain in head and back, with occasional delirium; there was also vomiting and nausea. In the intervals of the delirium he was dull and heavy, but able to answer questions correctly.

On the second day there was an eruption over the whole body of spots varying in size from such as would be caused by the prick of a pin, to an inch or more in breadth. These spots were of a dull red colour, not in the slightest degree elevated, and rather resembling ecchymoses, such as might be caused by the puncture of an insect than a proper eruption. There was no diarrhœa; moderate heat and fever; the tongue was scarcely coated. This patient died in four days from the attack, sinking into a state of coma. A sister of this patient, aged twenty, was taken ill and died in twenty-six hours from the commencement. She was attended by Dr. Packard, and had an eruption similar in all respects to that of the other patient during life. On examination after death no distinctive lesion was found.

A few days after these occurrences I was called to the Falls of Schuylkill, five miles out of the city, to see a number of cases of a new form of disease, which had excited much alarm in the neighbourhood; these were under the care of Drs. Service, Uhler, and Wilson. It was in that locality exceedingly fatal; in one family there were three deaths, and one other bad case of the disease, besides several others who were suffering from the causes of it in a mild form.

In another family there were also three fatal attacks; in a third there were two cases, one of which was fatal. The other cases which occurred, to the number of about twenty, were scattered singly in different families and in various localities. The isolated cases were less fatal than those which occurred in groups. Of the whole number of twenty, ten terminated fatally.

Unfortunately, no examination after death was permitted in any of these cases, notwithstanding the most urgent entreaties.

From an examination of the symptoms of a number of these cases, and comparing them with the one I had already seen in Philadelphia, I was enabled to make out the characters of this affection, which, never having been met with before in Philadelphia, was entirely novel to all of our physicians. The disease is unknown in Europe, and is not even mentioned in the complete work of Dr. Wood, or in any other one, I believe, on the Practice of Medicine. The only account of it to be found is an imperfect description given of it by a number of physicians in New England, where the disease appeared more than half a century ago, from the year 1807 to 1815 or 1816. These are contained in the works of Dr. Gallup, of Vermont, published in the year 1815, who speaks of it as having occurred for the first time in Massachusetts in 1806. Dr. E. Hale, of Boston, has also given an account of this disease, but there is a legitimate ground for doubt whether the disease he describes is not in fact genuine typhus fever, and totally different from true spotted fever. This work was published at Boston, in 1818, and there are scattered papers on the subject to be found in the *New England Journal* in the year 1814 and '15. Dr. Gallup gave the name of spotted fever to it. This designation should be retained, inasmuch as it is drawn from one of the most characteristic symptoms of a disorder which offers no peculiar anatomical lesions.

It seems also that epidemics of the same disease have appeared in Europe within different periods; such, at least, is the opinion of Dr. Gallup, although the history of the disease left to us is exceedingly imperfect.

There is no doubt that spotted fever has existed for some time in localities occupied by the U. S. troops. After the epidemic had occurred in the neighbourhood of Philadelphia I inquired of several of the army surgeons if they had seen any cases of the kind. They informed me that a number of examples of this unknown disorder had occurred near Norfolk, Virginia; and I have also heard that it has shown itself at Washington and Annapolis. Two cases, evidently of the spotted fever, are reported by Dr. Crary, of Hartford, in May, 1862, to the Connecticut Medical Society. The author speaks of them as examples of an anomalous and fatal variety of disease. (*Amer. Journal*, Jan. 1863.) I am also inclined to believe that the epidemic which occurred a short time since at Newport among the pupils of the Naval School was spotted fever, but I have yet seen no detailed account of it.

A limited but very fatal epidemic of this disease occurred during the month of March in Centre County, and another has also shown itself in York County, in this State. In the vicinity of Philadelphia the towns most affected by it were Manayunk, the Falls of Schuylkill, Norristown, Frankford, and Chester. It was not confined to the villages themselves, but has also shown itself in isolated dwellings. In the city of Philadelphia itself there were a number of cases, but scattered over a wide extent. From all the data I can collect, I should set down the number of cases in the months of March and April as at least two hundred. These occurred principally in the neighbouring towns, with but very few in the city proper.

*Mode of attack and symptoms.*—Some patients are taken down suddenly without the slightest premonition, with a chill and intense headache; others, again, have the usual premonitory symptoms of acute diseases for a few hours; a chill will then supervene, followed by fever; the countenance is slightly flushed, and the patient becomes dull and heavy—so much so that after a few hours, in bad cases, it is impossible to obtain any pertinent answer from a patient. In other cases he is dull and stupid, but answers when loudly spoken to. In slight cases there is merely a little dulness, but no positive stupor. There is occasionally positive delirium, but as a general rule the disturbance of the mind inclines more towards stupor or coma than active delirium. In fatal cases the patient always dies in a state of coma, which lasts several hours before death.

Another symptom of the disease is intense pain in the head and back, extending often to the limbs. This occurs with a chill, but very soon subsides, or at least is not spoken of by the patient, except when questions are directed to the subject. There is often vomiting at the commencement, but not usually very frequent or often repeated, and no epigastric tenderness. The bowels are rather constipated; there is a disgust for food in proportion to the severity of the fever. The urine is perfectly healthy.

The degree of fever is various; the pulse is frequent, not very strong, and in bad cases its force and frequency often diminish; the respiratory organs are perfectly healthy. The heat of the skin is more moderate than in most attacks of acute disease. In some cases I have remarked a peculiar odour exhaling from the patient. This, however, is not so marked as in many other varieties of disease.

*Eruption.*—In every case of the disease which I have seen, with the exception of one or two, terminating after an attack of a few hours, there occurred a characteristic eruption. This consisted of small spots, varying

in size from the point of a pin to the breadth of a quarter of an inch. In some patients there were much larger spots, or ecchymoses an inch or two in breadth; these seemed to depend upon the same causes which produced the smaller ones, and to be in fact identical with them, so that they might be termed confluent. The eruption, which at first glance resembled a genuine exanthema, was, on careful inspection, found to be very different from it. Each spot was of a dull red colour, almost purple in some cases, varying in shade, and, for the most part, not at all affected by pressure; some of the lighter coloured spots were to a certain degree diminished when strongly compressed, but the darker ones were evidently due to an effusion of blood in the midst of the true skin, and were therefore not modified in any way by external pressure. The spots were not in the slightest degree elevated above the surface, and were scattered pretty equally throughout the body, perhaps a little more abundant in the extremities than the trunk. The spots appeared usually at the end of twenty-four hours, but sometimes even sooner, and in some cases were visible after death, although not very perceptible during life. This was the case in those instances which terminated soon after the commencement of the attack. It may be readily believed from these remarks that the eruption was a simple exudation of blood or ecchymosis taking place beneath the skin, and similar in many respects to the spots which were sometimes visible in the interior of the body. In the cases of many patients the duration of the spots was very various—they were visible at least for a week or two, disappearing very slowly, in the same way as the dark colour of a bruise.

The complexion in many cases was peculiar, of a dull slightly sallow hue, but no trace of regular jaundice was perceived, nor did the countenance present the intensely red colour so often observed in typhus and typhoid fever. The eye was moderately injected in some cases, but rather in the veins than the arteries, and of a dull red hue. The injection, however, did not seem to be invariably present. No trace existed of any glandular swelling or inflammation, except in one case, in which an eye rapidly passed into suppuration and was entirely destroyed.

*Age and sex.*—No age was exempted; the patients were from two years to eighty-two. The largest proportion of cases, however, were in the young, between the ages of fifteen and twenty-five. More females than males were attacked. Of the cases which I saw two-thirds at least were females. Still, I would not conclude that one sex is necessarily more disposed to it than the other.

*Anatomical lesions.*—In one case in Manayunk, a patient of Dr. Uhler, I was enabled to see the autopsy of the whole body. The brain was found to be congested with blood, the veins containing an unusual quantity of it. At the base of the brain was an effusion of a few ounces of serum; the ventricles of the brain contained a moderate quantity of serum, but there was not a trace of any lesion produced by inflammation.

The lungs were slightly congested at their posterior portion, but in other respects were healthy and crepitant. The right cavities of the heart contained a considerable quantity of black fluid blood, of a remarkably dark hue, with a very small and flaccid coagulum. The left ventricle was perfectly empty. On the portion of the pericardium covering the left ventricle were two spots of a deep red colour, one of a quarter of an inch in breadth, the other somewhat larger, dependent upon an effusion of blood beneath the membrane. Another spot, of a rather larger size, was found beneath the serous membrane of the stomach. All these sub-serous ecchy-

moses were precisely similar to that found in one of the glands of Peyer, and were evidently dependent upon similar blood effusions.

The stomach contained but little mucus, its internal coat firm and healthy, and moderately injected. The small intestines healthy throughout, except one of the glands of Peyer, in which there was an ecchymosis of blood a quarter of an inch in breadth; the large intestine was healthy. The liver was of its natural colour and healthy.

The uterus was healthy, with a small coagulum of blood attached to its orifice. Beneath the serous membrane of the stomach was a dark red spot, of a third of an inch in breadth, similar to those already mentioned, and evidently depending upon a local effusion of blood.

The anatomical lesions thus confirmed the conclusions at which I had already arrived, respecting the pathology of the disease. That is, it is strictly a blood disorder, unconnected with any structural lesion. The internal ecchymoses of blood are precisely similar to the spots on the skin, and are evidently depending on the same cause. This fact establishes a wide distinction between them and those appearing in typhus and typhoid fevers, as well as the eruptions of the exanthemata. Although the proof of spotted fever being a blood disease is to my mind conclusive, it must not be ascribed to an impoverished condition of this fluid from innutritious or deficient food, as none of the patients whom I saw was in a condition of actual poverty, and a large majority of them belonged to a class amply supplied with all the comforts of life.

*Origin and extension of the disease.*—It is very evident from all the facts which I have learned, that this disorder appeared in the Army in Virginia before it had reached Pennsylvania; and it has evidently shown itself in other places, as in Connecticut. In this State it has struck particular localities, not, however, rigidly confined to them, but extending to detached habitations, and attacking persons who had not been in the neighbourhood of any sick. In the city of Philadelphia it has not extended beyond the families of those first attacked; nor, with the exception of a single instance, have I known m ore than one person in a family affected by it. At the Falls of the Schuylkill it presented some tendency to prevail in families. In one there were, including all cases, both grave and slight, at least seven or eight affected. Still the disease did not necessarily extend itself to the neighbours, who were constantly engaged watching the sick, nor was the reception of one patient into a house at all a cause of attack of disease to others. At Manayunk it broke out amongst the workwomen employed in one room in a woollen-mill, which furnished a number of patients, giving rise to the idea among the people of Manayunk that the disease was propagated from some contagious matter contained in the wool. It is needless to say this opinion was totally unfounded; indeed, from the whole history of the disease, there is no reason to conclude that it is in any way contagious, or, if at all capable of transmission one to another, it must be only in peculiar cases, like typhoid fever or dysentery, which, although as a general rule not contagious, are in some cases capable of transmission to other patients. I am inclined to believe that there is no positive evidence of this disease being ever communicated from an infected patient to those who are healthy. It is the more important to understand this mode of propagation of the disease, as some individuals have been disposed to regard it as a contagious disorder originating from the army.

*Duration.*—No disease has, in the fatal cases, a much more rapid course. A case terminated fatally in seven or eight hours; a number have died in

from twelve to twenty-four hours. The largest number in the course of the second day. If the patient should live after forty-eight or fifty hours there is a fair chance of recovery, although fatal cases are met with after lasting for several days. In one case, even, death followed after the lapse of several weeks. The duration of cases ending in recovery is equally variable with those that are mortal. Some are convalescent after two or three days of indisposition, others last for a week or two, and in one case at the Falls of Schuylkill, a patient of Dr. Service, recovery was protracted for many weeks.

*Diagnosis.*—It must be very plain that on the first appearance of an unknown disease in our midst, all ordinary rules of diagnosis fail. The first case which I saw, was so utterly perplexing, that I could not in my mind arrive at any satisfactory diagnosis of the case, therefore as the symptoms of the brain were more developed than those of any other organ, I reported the case as death from meningitis. A physician who attended another case in the same family was equally puzzled with myself, and reported the disease as typhoid fever. There are two cases evidently of this disease reported by Dr. Crary in the *American Journal*, January, 1863, as examples of an unknown and fatal character. The diagnosis of the affection, when once thoroughly understood, is not, however, difficult, for the same set of symptoms occur in no other disease. These are the sudden occurrence of intense headache and spinal pain, followed by the peculiar eruption which resembles that of no other fever, but presents a distinct resemblance to the ecchymosis of scurvy, and besides this, the rapid development of brain symptoms, that is stupor, more or less severe, and in bad cases always coma. No one who has become once familiar with this disease can possibly mistake it for any other, such as typhoid or typhus fever, or the various forms of exanthema.

A number of my medical friends, of the highest professional standing in this city, have never yet seen examples of spotted fever. Under these circumstances some of them have been led into precisely the same error of diagnosis into which I had myself fallen with regard to my first case of this disease. Some have fancied it was a variety of typhoid fever; a larger number, of typhus fever; and one, oddly enough, of influenza. It requires nothing but actual observation to entirely dissipate all such ideas. The disease belongs to the same class as other continued fevers or exanthemata, but is just as distinct from typhoid or typhus fevers as from measles or smallpox. The two affections to which it has the closest similarity are the petechial typhus fever and some malignant varieties of scarlatina.

The peculiar colour and form of the eruption, and the development of throat symptoms in the latter affection, added to the other characters of the disease, will point out sufficiently the pathognomonic symptoms of scarlet fever. There remains, then, merely the diagnosis between spotted fever and certain varieties of typhus; for I take it as demonstrated that no one could possibly confound two diseases so perfectly distinct as spotted and typhoid fever

Between typhus and spotted fever, however, there are some points of resemblance; both these diseases attack subjects of any age, are nearly equally free from pathological lesions, and are each attended by a peculiar eruption. Still there are well marked diagnostic characters which mark a broad distinction between these diseases. These are as follows: in spotted fever the disease is very rapid in its course, with delirium, but rarely of an active kind; an eruption wholly different from that of typhus; less heat of

skin, which is never of the burning temperature of typhus, and with none of the peculiar odour of this disease. Typhus offers a true exanthematic eruption; but I have already described that of spotted fever to be rather a scorbutic hemorrhage than a real exanthema. Besides, the duration of typhus fever is nearly as regular and as long as typhoid; whereas in spotted fever the course of the disease is irregular, and generally much shorter. The fearful difference in the mortality of the two disorders and the unequivocally contagious character of typhus fever, with the slight probability of the existence of any symptom of the same kind in spotted fever, are also additional points of diagnosis.

In the year 1836 I was first led to study the diagnostic characters of typhus and to lay down the distinctive characters separating it from typhoid fevers. (*Amer. Journal*, 1837.) These are now adopted by all the physicians of the French school, and by a large number of English observers. I could not, therefore, help regarding it a most fortunate circumstance that accident had afforded me an occasion for establishing the characters of another variety of febrile disorder which, although not so common as either typhus or typhoid fever, is yet more fatal in its symptoms and course. These three varieties of fever I regard as more distinct than many cases of intermittent and remittent; and although occasionally the distinctive characters may be somewhat confused one with another, yet on the whole they are so well defined that no legitimate excuse can exist for confounding them one with another. The diagnosis of the spotted fever is, however, much better defined than that of typhus and typhoid is in all cases, for sometimes these approach so nearly in their symptoms as to render the diagnosis of them very difficult. In spotted fever no one with but a moderate power of observation could possibly confound it with the other affections; although some medical gentlemen of high professional standing have supposed it to be identical with them. The only thing which makes their opinion valueless is that they have never seen a case of spotted fever.

This disease, indeed, is one which I should place in the list of rare peculiar disorders, evidently depending upon a diseased condition of the blood, which occasionally show themselves; they last for a time, then disappear, but are not sufficiently permanent in their attacks to find a place in the regular treatises on the practice of medicine. Such were the two epidemics of negro fever, as they were called, which appeared in Philadelphia, the last one about fifteen years ago. Of the second of these epidemics, I am sorry to say, no history was ever given. A short account of the first one which appeared in the years 1820–21, at Philadelphia, was given by Dr. Emerson in the 3d volume of the *Philadelphia Medical Journal*. It is very evident that although this was, like spotted fever, a blood disease, in symptoms and course it was very different. It was besides almost confined to the coloured inhabitants of the city. Of the last mentioned one, I saw a few cases at the Almshouse in this city; it did not, however, bear the slightest resemblance to the spotted fever, and besides, was confined mainly to the colored population. It is needless to say some history should be preserved of all such rare and anomalous forms of epidemic disease.

Besides, the diagnosis becomes easy to one who has become familiar with the disease, from the individual physiognomy of the patient. There is a peculiar dusky hue, and an expression of stupor conjoined with the eruption which characterize the disease at once, especially if we add to these signs the cerebral symptoms of the disease. The diagnosis of the

disorder has been especially interesting to me, as I believe that I was earliest in making out its distinctive characters; certainly so in this locality.

*Prognosis.*—The prognosis of the disease is soon learned. If the cerebro-spinal symptoms are but moderate, and the fever not very intense, the patient will certainly recover unless badly treated. The prognosis is always, however, a most serious one. At its first appearance as an epidemic it is exceedingly fatal. In different localities from one-half to two-thirds of those attacked have fallen victims; in one locality I have been told the mortality was even greater, nearly all attacked having died. When a proper system of treatment is adopted, a favourable prognosis may often be made. If, however, the poisonous cause of the disease acts with great energy, rendering the patient comatose within a few hours, the prognosis is very serious if not necessarily fatal.

*Mortality.*—The mortality in spotted fever like that in many other severe diseases, is of course at first very great, as in all epidemics of the kind. Physicians endowed with a moderate degree of self-complacency are apt to imagine that they have adopted a new and successful method of treating a disease, when, in reality, the sole difference is, that the disorder has lost the violent character which at first was peculiar to it; still, this epidemic of spotted fever has been thus far so severe that it is probable, though I cannot state the proportion with certainty, that at least one case out of three or four has been fatal. At first the mortality was much greater in several localities.

*Nomenclature.*—Inasmuch as this disease is attended by no definite anatomical lesions, the appellation given to it more than half a century ago by Dr. Gallup and others in New England of spotted fever, should be retained. It is sufficiently characteristic, and involves no doubtful point in question. The only objection to the term is that the disease may be confounded with epidemic typhus or ship fever, in which the whole body is also covered with spots, but these constitute a real exanthema, and are, of course, of a totally different character and aspect from the eruption of spotted fever. The latter is little else than a real hemorrhagic effusion very like that of scurvy.

*Treatment.*—In the present epidemic I have never practised nor advised bloodletting in any case I have seen; nor am I aware that others have resorted to it; the whole characters of the disease are such as would render this remedy, in the majority of cases, exceedingly dangerous. I should very much doubt, from the pathological history of the disease, whether general bleeding would ever be appropriate, as the disease is one evidently depending upon a morbid but not inflammatory condition of the blood. Cupping has been tried in a number of cases, but with doubtful results. In some cases, however, it is possible it may be a benefit. The principal treatment consists in applying external heat in the cold stage, and afterwards placing flying sinapisms to the extremities. A blister to the back of the neck may sometimes be applied; but of the favourable action of this remedy I must admit that there is often much doubt. Not that the immediate contra-stimulant action might not relieve the brain and produce a salutary revulsion upon the nerves immediately connected, but because the disease is so evidently a blood disorder, with a strong tendency to local effusion. Therefore, if we carelessly direct the application of blisters we may do mischief to a patient in whom extravasation of blood has either actually taken place, or is in imminence of showing itself. The head should be

sponged with cold water, and occasionally cold may be more permanently applied.

The most important remedies, however, are stimulants—whisky, brandy, and the like, and quinine given in doses of a grain every hour. Sometimes as much as two grains every hour may be administered for a short time. The quantity of brandy used is sometimes very large—at least a tablespoonful every two hours, or even every hour. In others a much less dose will be ample; that is, the same rule should be observed in the treatment of this disease as in many cases of typhus fever; stimulants should be given in such quantities as the peculiar symptoms of the individual case and the special condition of the patient may require. It is, of course, impossible to fix any precise quantity as the dose which is required; but a certain proportion of wine or some alcoholic stimulant has been necessary in every case which I have seen. Other stimulants are doubtless often of service, such as ammonia, ginger, &c., but as none of them is equal to some alcoholic preparation, they are of comparatively little value in so rapid a disease as spotted fever.

The necessity for stimulation is based upon the rapid loss of force which takes place in this disease. To so great a degree does this exist that I have not seen good effects from even local abstraction of blood which was prescribed in a few cases by physicians who had been in attendance on several of the patients. This view of the effect of bloodletting is confirmed also by the pathology of the disease. It is not an inflammatory disorder, but obviously depends on an altered condition of the blood, which cannot be cured by diminishing its quantity, but on the contrary the true treatment of the affection depends upon the curative efforts of the system, which is to be supported instead of enfeebled during the process.

Singularly enough, however, Dr. Gallup recommends the treatment of the disorder in New England by copious bloodletting. This treatment was unfortunately at his time carried to an extraordinary excess, and is evidently founded upon the absurd practice, then too much in vogue. Still, I would not be understood as absolutely condemning in all epidemics of this disease, the depletory treatment. It is possible that under certain circumstances it may be allowable, but in the cases which I have seen it would not be warranted by either the pathology or symptoms of the disorder.

If vomiting does not occur spontaneously, it is well to bring it about by a draught of warm water or a mild dose of ipecacuanha. The reason for this treatment is based upon the fact that the natural emesis should be regarded as a spontaneous mode of relief, or perhaps it may be caused by the necessity felt by the stomach to free itself of a quantity of matter which it cannot digest. This necessity is much more obvious in this disease than in most other affections, from the suddenness of the attack, which often strikes individuals in perfect health, without being preceded by the usual prodromes of disease.

Purgatives should not be trusted to; they would much annoy and enfeeble the patient without doing good. An enema may be given at the commencement and a light laxative soon afterwards; but this is merely for the purpose of unloading the bowels, not for having any special action on the disease. The food should, of course, be at first limited to diluent drinks; but if the disease last over a day or two I would give the patient essence of beef or some equally nutritious substance.

It is thus perfectly plain that the mode of treatment is based entirely upon a conviction that the important indications are to keep up the strength of the patient, and to combat, as far as possible, local symptoms until the

poison causing the disorder should be eliminated from the body. It is worse than useless to diminish the strength of the patient, for upon this we depend to carry him safely through the disease. This mode of treatment, I may state, has been generally followed by physicians who at first had been much less successful with the ordinary remedies used in the management of many acute disorders.

If I were disposed to mingle theoretical reasons with the absolute deductions of fact, I should regard the stimulant treatment as proved to be the most appropriate by the symptoms and the absence of decided structural lesions. The disease I believe to be produced by some unknown cause, which we may call poison if we choose, acting upon the body. A certain time is required for the elimination of it from the system, and during this process we must support the strength by appropriate food and stimulants.

Other remedies than those I have mentioned are appropriate to certain symptoms in spotted fever, but those, of course, will occur to every practitioner in every case he may be called upon to treat. I wished merely to indicate the mode of treatment on which we must rely, leaving details for the administration of every practitioner.

*Spotted Fever.*—Dr. LAMB, in response to an inquiry by the President, as to his experience in this epidemic, made the following remarks:—

In describing the anomalous disease which has recently given so much alarm in some of our suburban villages, it may be very proper to describe the general aspect or physiognomy of the patient, which is so remarkable, that when once seen, similar cases cannot be easily mistaken. It would be very difficult to describe the anxiety and intense suffering exhibited in the countenance of the patient. The jactitation is incessant, and the suffering without intermission. I will endeavour to describe some of the most striking cases as they were presented to my observation.

The first decided case I was called to, was in Frankford, on the 12th of March. The patient, J. McC., was a girl, in her eleventh year. She had been suffering since the forenoon of the preceding day. The mother had given her cathartic pills, which I suppose had operated freely; she had vomited frequently, and at the time of my visit was suffering from tenesmus, or imagined that she wished to pass something, desiring constantly to be on the close-stool, but without really having any evacuation. The child was constantly rising on her elbow, or turning from one side to the other, complaining of her forehead, back, and extremities. There was no sensible increase of heat; but a peculiar flush of the face, with a wild expression of feature, considerable dilatation of the pupils, which seemed insensible to the effect of a strong light. Tongue moist and slightly furred. Pulse irregularly intermittent, above ninety in the minute, distinct but not full, and easily compressible, no appreciable disturbance of the respiratory organs, no tenderness of the epigastrium or tension of the abdominal muscles, but extreme sensitiveness to the slightest touch or pressure upon the arms or legs. At 10 P. M. there had been no return of vomiting; in other respects no change was observable.

13*th*. The patient has spent a restless night, and the delirium which had been persistent from the beginning is unabated, though the attention could be gained, and she would seem to answer my questions with sense, and begged me to do something for her head. Pulse a little more frequent and more full. Some increase of heat about 2 P.M., when, for a few hours, there appeared on the arms and legs something resembling urticaria, vary-

ing from a few lines to an inch in length, slightly raised, as if produced by a blow from a switch, and uniformly pale red.

14*th.* The patient has spent another restless night. Pulse very irregular but yet distinct. The remarkable irregularity consisted in a frequency of about two and a half, and then suddenly falling off to one pulsation in the second, and this alternating from four to six times during one revolution of the second hand!

15*th.* The patient could be aroused, and responded slowly to my questions. Pulse still perceptible and irregular. Pupil of the right eye very much dilated, while the left pupil was contracted to a mere speck. At noon she was in a profound stupor, and ceased to breathe at 4 P. M.

In this case the alvine and urinary evacuations continued normal. There was no regular chill, but a slight daily exacerbation. During the last night and day the skin was pleasantly warm and moist. From the first there was no refreshing sleep; when the eyes were closed in apparent sleep for half an hour at a time, there was still no cessation of motion, nor was there any abatement of the delirium.

While this first case was under treatment, M. E. R., a girl of eight years, in a parallel street, distant about five hundred feet, was attacked. On the 13th she was at school, and out from home until 10 o'clock in the evening. The mother first ascertained that the child was ill about midnight. On the 14th her situation was very similar to that of the first patient. She became comatose about 2 P. M., and died at 5 P. M. on the 15th. A few specks, like flea-bites, might be seen on the neck and breast of this child.

After an interval of ten days, during which time no case occurred in or near Frankford, three cases came under my notice, all commencing about 8 P. M. on the 24th of March, two in the family of Mr. E. and the other in the family of Mr. R. The former, on the eastern side of Frankford, about six hundred yards east of the first two cases, and the latter about the same distance east of Frankford, in Bridesburg.

Miss M. E., aged nineteen years, had been uniformly healthy; she complained of acute pain in the forehead, with pain and excessive tenderness of the extremities. Some nausea, slightly delirious, pupils of both eyes dilated, skin moderately warm, face flushed, pulse about ninety, with frequent intermissions; circulation sluggish and deficient in power; a few small petechial specks on the legs and arms; tongue moist and slightly furred.

25*th.* Some improvement in the circulation; pulse eighty-four, full, but compressible. In the evening the pulsations were ninety-four with increase of delirium. Evacuations regular and normal.

26*th.* The patient has passed a very restless night, and the pulse exhibits the singular irregularity noticed in the case of J. McC. The general aspect of the case is more serious.

27*th.* A moderate catamenial flow commenced last night—ten days too soon. The patient is evidently sinking. But there is a remarkable steadiness of the pulse, almost approaching to a healthy standard. Pulse without intermission, and seventy-two in the minute, full; skin pleasantly warm and moist; breathing full and free. Had other conditions of the system been equally favourable, I should have felt that she had passed the crisis, and might recover. But she was then sinking into a state of insensibility, had nearly lost the power of deglutition, and died at 11½ P.M. Coma in her case did not become complete until about three hours previous to death.

The case of her brother, J. E., aged fourteen years, was in several respects different, and had a more satisfactory result. He had previously suffered from pulmonary disease, and the chief point of attack was now in the same organs. He had the intermittent pulse; the petechial spots and *congestion* of the lungs; same pain of the head, but no delirium. Within the first twenty-four hours he seemed in great danger of speedy suffocation, but the crisis soon passed, and after the fourth day he became convalescent. His recovery was perfect and rapid.

The third case occurring on that evening, Mrs. E. R., aged thirty-seven years, ran very speedily to a fatal termination. She took her tea as usual about 7 P. M. At eight she complained of acute pain in the head and giddiness. She was carried up to the bedroom in the arms of her husband. Body warm and extremities cold. Pulse irregular and intermittent, thread-like. Pupils greatly dilated, and vision very indistinct; delirious. Mrs. R. became comatose at 4 A. M., and died at noon, of the 25th, about fourteen hours from the first feeling of indisposition. In this case there were numerous patches or blotches on the body, face, and extremities; some having the appearance of ordinary ecchymosis, while others looked and felt as if the skin had been forcibly raised or pinched up, and blood effused so as to elevate the surface. These blotches varied in size, from three or four lines to three-fourths of an inch, with irregular points. It was ascertained that this patient had her catamenial flow out of time during the few hours of her illness.

In the family of Mr. E. where there were already two cases, a third, Miss A. E., was attacked on the evening of the 26th. I saw her within one hour from the first feeling of indisposition. The acute pain in the forehead and back were her first symptoms, and at this early stage of her sufferings the pupils of both eyes were dilated, the right eye much more than the left; the face was flushed, the body and extremities warm, pulse very slightly intermittent, not more than eighty-four to the minute; tongue moist and a little furred; extreme restlessness, and muttering delirium; some nausea, with occasional vomiting. At 8 A. M. on the 27th there was an increase of delirium, with a tendency to sink. The inferior extremities were covered with an efflorescent eruption, which might have been mistaken for rubeola or variola. From the knee down, the cuticle was perceptibly elevated, giving a feeling of decided roughness to the skin. Emesis was still troublesome; the matter thrown up seemed to be composed of dark bile mixed with mucus. She now complained of soreness and pain in the legs, with increased pain in the spinal column. The head was thrown back, forming with the cervical vertebræ a slight, but very decided curve.

28*th*. There seemed to be an improvement in the general aspect of this case. Pulse more full and regular, less delirium, but the tetanic appearance in the position of the head continued.

29*th*. No perceptible change. One of my medical friends from the city, who saw her to-day, thought she would recover. Her monthly flow has made its appearance out of time. On the 30th this patient was in the same condition, and so continues to the present time, giving strong hopes that she may be restored to health.

On the morning of the 27th the step-mother of these three children, Mrs. E. E., complained of slight pain in the head. Her age is twenty-nine years. She seemed exhausted from loss of rest and debility. Pulse intermittent. I advised rest and nourishment; but she maintained her

position by the bedside of her sinking daughter M. until the case terminated.

28*th.* I found Mrs. E. at 8 A. M. suffering from intense pain and soreness of the right thigh and leg, with a feeling of suffocation. The pain was in the course of the femoral vessels, just below the groin; the interval between that point and the knee was neither tender nor painful, but the knee and leg were so extremely sore that the slightest touch or pressure was agonizing. Pulse intermittent. Tongue covered with a light-coloured coat. Skin pleasantly warm. Evacuations normal, except that she was unwell at the middle of her period. The inferior extremities were covered with an eruption in all respects similar to that of the second daughter, and she continued to suffer until this, the fourth day, when I find her in all respects better. She has passed the crisis in safety, and will, in all human probability, recover.

In the few cases which have been under my care, I have seen no decided response to any remedial agent where the head was the chief point of attack.

*Cystic Disease in an Undescended Testis.*—Dr. HEWSON gave the following account of a case of this kind, operated on recently by him, and showed the diseased parts as removed, with a cast and photograph of them before the operation.

Although cases of disease of the testicle when retained in the inguinal canal have been reported by Chopart, Robert, and others, but little I find has been made known or written in regard to the history or diagnosis of such diseases. I have, therefore, thought it advisable to present to the College this evening, the specimen whilst fresh, removed by me from such a case at present in the Pennsylvania Hospital, with its history, as far as completed, and with a cast and photograph taken previous to the operation.

This patient is named Henry Faust, and was admitted on the 23d of March. He is a single man, 40 years old, a German by birth, a dyer by occupation, and has been living in Allentown, Pa., where he had enjoyed uninterrupted good health up to about three years ago, when he received a blow in the right inguinal region directly on the testicle, which was lodged in the canal there.

This occasioned a swelling, which soon became painless, but steadily increased until last December, when it had attained half the size the cast shows it to have been when he was admitted into the hospital. He then (last December) received another blow on it, which caused it soon to double its previous size. After this sudden increase in the tumour, the man's lower limbs began to swell from dropsical effusion. For this he was treated in Allentown, where it was also proposed to tap the tumour, under the impression that it was a hydrocele. He refused to submit to this operation, and came to the city.

On examining the tumour I found it irregularly ovoid, measuring around its base 19½ inches, across its surface in the line of its greatest diameter 11 inches, and across its surface, in that of the lesser or vertical diameter, 9 inches. It was firm but elastic to the touch, and the veins on its surface as well as those on the same side of the abdominal walls, were very much enlarged. The tumour was evidently beneath, at least the tendon of the external oblique, from the tension produced in the walls of the belly, from the crest of the ilium over to beyond the symphysis pubis. The upper part of the belly was perfectly soft and flaccid.

Coughing caused the tumour itself to move in a singular manner, by elevating the inner and depressing the outer end at the same moment.

No hernial succussion could be felt from this coughing.

The elasticity was considerable, especially at the apex of the tumour, but no fluctuation could be felt, nor could any light be transmitted through it in a darkened room.

At its base the tumour felt firmer and denser than at any other point, but did not appear to be firmly adherent to the bone or other tissue beneath.

There was neither œdema nor hydrocelic effusion in the scrotum, which, on the contrary, was quite empty, as the left testicle was also drawn up, partially, into its inguinal canal.

The only sensations the patient complained of were those of weariness and tension in the inguinal region. His countenance was somewhat sallow and anxious. His tongue was clean, and his pulse quite natural and tranquil. He presented the appearance of possessing his virile powers in their fullest extent. The age of the patient and his appearance naturally suggested, at first, the idea of this tumour being malignant, but its history and progress, and the sensations derived from its examination were against such a supposition, and the impression made on my mind, after a careful consideration of these circumstances, was that I had a case of cystic sarcocele to deal with, that the only means of relief was in complete excision.

This operation was undertaken with the concurrence of my colleagues, Drs. Norris and Pancoast, on last Saturday, the 28th of March, before the class at the hospital. I proceeded in it with as great caution as if I had a case of strangulated hernia to deal with, and, indeed, the existence of a hernia, in the midst of the morbid mass, had occurred to my mind as a possible complication. I made, first of all, an incision on the grooved director, along the surface in the direction of the greatest diameter of the tumour of at least 11 inches, through the integuments, and then through the tendon of the external oblique, so as to completely expose the whole mass. The tunica vaginalis was then reached. This was found very much distended and, on puncturing it, about a pint of clear yellow fluid, like that from a hydrocele, escaped. Then the testicle, with the epididymis and cord studded here and there with small cysts from the size of a pea to that of a filbert, was revealed, and all these structures were found much enlarged and diseased, the testicle and epididymis increased to at least three times their natural size.

These with the tunica vaginalis were carefully separated from the tissues beneath by the fingers and handle of the scalpel, exposing the peritoneum below the arch of the conjoined tendon for the distance of at least two inches. The cord was then found diseased so high up that I had to enlarge the external end of my original incision before I could get a ligature around it in a part where it was evidently healthy. This accomplished, the severing of the diseased mass from the remnant of the cord was effected by the ecraseur. The use of this instrument did not, however, prevent all hemorrhage, for I had subsequently to secure a vessel of considerable size in the stump left behind. The only other vessel which occasioned any amount of hemorrhage during the operation, was the epigastric, which was, of course, secured without much difficulty, as was also the superficial circumflex, and one or two small vessels in the bottom of the wound. The wound was then dressed with leaden sutures, and the patient put to bed and ordered ℥ss of solution of morphia, after he had recovered fully from the effects of

the ether. The whole operation occupied the greater part of an hour in its performance, and as but three days have elapsed, nothing can yet be said in regard to its result, but I shall take some future occasion to make it known. By the expiration of my term of service, for the present, at the hospital, the case has passed into the hands of one of my colleagues for after-treatment. The great extent to which the peritoneum was exposed in this operation necessarily endangers the patient's life from inflammation of that extensive and sensitive serous membrane.

As to so extensive a collection of fluid as that found in the tunica vaginalis in this case, escaping detection by transmitted light, after the careful examination given to it by my colleagues and myself, I have no explanation to give, unless it be that the tendon of the external oblique being stretched like a tent (of which the apex of the tumour represented the pole), prevented any position in which the light could pass through the fluid.

A minute examination of the portion of the cord removed in the operation, has shown it to be in a state of great hypertrophy, in the midst of which there is a streak of yellow, soft tissue, which, microscopically, has been found to be the same growth in a state of fatty degeneration, with here and there some tubercular matter.

In the lower part of the epididymis and in the testicle itself the fatty and tubercular deposits predominate, and are very extensive. There are the remains of some small cysts still to be seen in the substance of the testicle, as well as on the epididymis.

A fact of some interest to the anatomist was, in this case, the perfect character of the tunica vaginalis, enveloping as it did the gland and being completely closed around the cord above, so that no hernia could take place along the cord. A small band of apparently dense cellular tissue extended from the lower end of this tunic into the scrotum.

(*Addenda*, furnished by Dr. HEWSON to complete this history.)

This patient died on the 3d of April, a victim of erysipelas, which attacked simultaneously nearly all the patients who had been recently operated on in the hospital. His wound became œdematous, and gangrenous on the third day. His belly grew enormously tympanitic, and he sank in low muttering delirium on the sixth day. I had not the opportunity of witnessing the autopsy, but have been furnished with the following notes taken on the occasion by Dr. Richardson, the resident who had charge of the case.

Autopsy made April 4, 1863, 24 hours after death.

"*Lungs.* Contained a few scattered granular bodies which were not aggregated together, but may, perhaps, have been tubercular." (No microscopic examination appears to have been made of them.)

"*Heart*, healthy, but contained firm clots in all four cavities."

"*Liver* and *Spleen* normal."

"*Kidneys* appeared fatty, but no microscopic examination was made."

"*Intestines* seemed healthy, and *there was no peritonitis.*"

"*Stomach* contained about ℥iv of black vomit, but its mucous surface presented no evidence of inflammation."

On the front of the spine and firmly attached to it from about the level of the 10th dorsal to that of the 4th lumbar vertebra, was a mass of substance, which was cut into while removing the mesentery, on the supposition of its being some enlarged gland. But, upon further examination, it was found to be about 1½ inches thick, and to have imbedded in it the abdominal aorta, still pervious; on tracing the vena cava ascendens downwards from the diaphragm to the right vein, it seemed to have become obliterated.

"Exploring the vena cava under the microscope, a portion of this has showed a great number of tubercle cells mixed with much fibrous tissue."

*Cataract.*—Dr. HAYS made some verbal remarks on this affection, of which the following is an abstract.

Dr. H. said he would offer for the consideration of the Fellows of the College some speculations which have lately been occupying his thoughts, and which, if well founded, would tend to invalidate a long accepted surgical precept, and also to elucidate the pathology of cataract.

There are few doctrines more firmly established, than that cataract is not amenable to medical treatment—that its progress can neither be arrested nor retarded by therapeutic measures—and that the only means of relief is a surgical operation. It certainly had been too often the speaker's painful task, when applied to by persons affected with incipient cataract and who anxiously inquired whether the progress of the disease could not be arrested, to be obliged to crush their hopes by the avowal that no such means existed, and that they would be obliged to abide their time and then trust to an operation for their relief.

It is difficult, indeed, to conceive how, in the existing state of physiological science—at all events, up to a recent period—any other opinion could be entertained. The lens is a transparent body inclosed in its capsule, without any vessels passing into it. How, then, was it possible to act on it by medicines?

It has been within a few years only that its mode of nutrition was understood. This is effected, as in some of the lower animals, by osmosis through its capsule.

I was first led to doubt the correctness of the doctrine under notice by the experiments of Dr. S. Weir Mitchell,[1] of this city, communicated to the Biological Society, Oct. 3, 1859, and published in the *Am. Jl. Med. Sci.*, for Jan. 1860. In experimenting with frogs by injecting syrup into their cuticular sac he found that the lens of the animal became opaque, and what was most remarkable that when the animal was replaced in water, after some hours the opacity diminished, and, in some instances, the transparency of the lens was entirely restored.

This last circumstance struck me as one which might lead to important practical results, and at all events it pointed out the direction in which our investigations should be made for that purpose.

Additional light was soon shed upon this subject by Dr. Richardson, of London, who, after reading Dr. Mitchell's paper, instituted a number of similar experiments, the results of which he communicated to the Medical Society of London on the 26th of March and 16th of April, 1860.[2] These experiments confirm Dr. Mitchell's results and throw much additional light on the subject. Dr. Richardson shows that cataract may be produced by the injection into the system not only of cane sugar, but also of grape and milk sugar—and likewise of glycerin, alcohol, of solutions of chloride of sodium, of acid urate of soda, and of lactate of soda. Death was also produced when any one of these articles was introduced into the system, in sufficient quantity.

Dr. R. concludes from his experiments that "as the cataractous appearance is modified by the density of the producing body, and is removable by

[1] On the production of Cataract in Frogs by the administration of sugar.

[2] See Am. Journ. Med. Sci., July, 1860, pp. 257–9.

reversing the conditions which led to it, and as it is producible in a clear lens removed from the body, it is a demonstration that the cataract induced in the different animals is a purely physical—that is to say, osmotic—change."[1]

Dr. Richardson advanced a step beyond this and suggested a practical application of this discovery.

"As a point bearing on the treatment of cataract," Dr. Richardson said, "that inasmuch as temporary opacity produced by exposure of the lens to syrup was removable by an after exposure to water (that is, by changing the position of the medium surrounding the lens), it was worthy of consideration whether an operation for letting out the aqueous humour by a small opening, and refilling the anterior and posterior chambers with distilled water, might not lead to removal of the cataractous condition in the earliest stages."

Soon after this, it was announced that M. Sperino, of Turin, had succeeded in curing cataract by repeatedly evacuating the aqueous humour. This was to some extent a confirmation of the value of Dr. Richardson's suggestion. M. Sperino was not led to this mode of treating cataract by any physiological reasoning, but rather empirically. "He had long derived great advantage from the repeated evacuation of the aqueous humour in cases of iritis, interlamellar keratitis, severe hypopion, staphyloma of the sclerotica, congestion of the choroid and retina (even when attended with exudations), opacities of the vitreous humour, and in pseudo-membranous deposits in front of the lens. Even in some desperate cases of glaucoma attended with commencing cataract, this treatment, useless as regards the loss of sight, was of use, a diminution of the opacity of the lens following the evacuation." M. Sperino promises to soon publish a work which will contain the results of his treatment of cataract by this method and show the kind of cataract to which this operation is applicable.

M. Sperino's operation consists in puncturing the cornea and preventing the puncture from uniting by introducing at short intervals into it a small probe, thus keeping up a drain of the aqueous humour. Mr. Hildige, of Dublin, professes to have tried this plan and without success; but he did not adopt M. Sperino's process. On the contrary, he made a fresh puncture at intervals, and these repeated punctures caused so much irritation and inflammation that he was compelled to desist.

These observations throw new light on the pathology of cataract, and seem to hold out a hope that remedial means may be discovered of arresting the progress of that disease, and, perhaps, even of restoring the transparency of the lens; but the physiological law which presides over the changes in the lens, and which was to guide us in our search for the means of controlling these changes, required to be more clearly determined.

In conversing, a short time since, with my friend Prof. Jackson on this subject, he informed me that experiments similar to those of Dr. Mitchell had been previously made by Kunde, and referred me to Claude Bernard's "*Leçons sur les propriétés physiologiques et les alterations pathologiques des liquides de l'organisme,*" for an account of them.

In M. Bernard's lecture, delivered on the 11th of Dec. 1857, that eminent physiologist, to whose experimental researches we are indebted for

[1] It is just to Dr. Mitchell to say that although he believed that the direct contact of the sugar with the lens was essential to the production of what he called sugar cataract, he recognized the fact that the phenomenon was produced by osmotic action.

many advances in physiological science, merely briefly notices Kunde's experiments, without stating when they were made. In that lecture he, however, treats of the physiological importance of water to the organism, and the doctrines which he there develops seem to me to afford a physiological explanation of the production of cataract and to point out the direction in which our investigation for the means of remedying that condition should be directed.

M. Bernard shows that water is an essential component of all living organism—it is the necessary vehicle for the materials which enter into the double movement of nutrition and excretion—without which life cannot be maintained. "Independently of their special properties, the organic fluids," he says, "are allied by a general character; all owe their first physiological importance to the water they contain; before being useful in consequence of the substances which they may hold in solution or in suspension, they are first useful as fluids."

M. B. states that water constitutes nine-tenths of the whole weight of the human body; but the proportion of water to the solid constituents varies in the different fluids, being from 80 to 90 per 100 in the blood; 98 to 99 per 100 in the gastric juice; 70 to 80 per 100 in milk, &c.

Mr. B. next investigates the influence which the quantity of water in the organism exercises on physiological phenomena. To do this, he says, "two processes present themselves to the experimenter; one consists in detracting water from the body, the other in adding water to it. The first is difficult to accomplish. Nevertheless, Dr. Kunde has effected this in frogs, and observed some singular results. His process consisted in introducing into the intestinal canal of these animals some sulphate of soda or sugar; endosmotic action was thus induced which caused a part of the water of the blood to flow into the intestine; the blood was thus deprived of a portion of its water."

"One of the first results of this experiment was the loss of transparency of the crystalline—the animal becoming blind. This result quickly disappeared when the frog was replaced in water. Convulsions also resulted from this impoverishment of the blood of its water, very probably from the subtraction of the fluids which bathed the nerve, and these convulsions disappeared when the water which the system has lost was restored to it."

M. Bernard injected water into the veins of dogs, thus increasing the normal proportion of water in the system, and found he could do this to a considerable extent, without ill consequences; but so soon as the proportion of water exceeded certain limits, pathological results followed. Some of the secretions were first diminished, and as more water was injected, these secretions became entirely suspended, convulsions then supervened, and finally death.

It is thus seen that while the proportion of water to the solid constituents of the blood may vary within pretty extensive limits, without injurious consequences, yet so soon as these limits are transcended, pathological conditions at once result.

The only one of these which at present interests us, is the opacity of the crystalline lens following the diminution of the proportion of water in the blood below its physiological limits.

Dr. Mitchell supposes that the direct contact of the sugar with the lens is essential to the production of the phenomenon in question; but this is disproved by the experiments of Kunde and Richardson, which show that other articles that cause excessive exosmosis of the fluids produce the same

phenomenon; and, further, Hepp, who examined a diabetic cataractous lens, extracted by Stoeber at the ophthalmological clinic of Strasbourg, could not find in it a trace of glucose.[1]

Dr. Mitchell states, that the mere abstraction of water from the lens is insufficient to cause opacity, because the lens when dried does not become opaque. This statement, we believe, requires some qualification, and at all events when excessive exosmose from the lens is produced, the superficial nucleated cells and lens tubes are as a consequence emptied of their contents, and the structure of the lens is thus so altered as to render this body more or less opaque. This vacuity of the nucleated cells and lens tubes has actually been observed by microscopists in the examination of cataractous lenses.

Is this opacity of the lens then the consequence of the impoverishment of the fluids of the body of their water, which causes an excessive exosmosis of the more fluid contents of the lens, and impairs the nutritive functions of that body?

There are a number of facts which seem to lend support to this view.

Cataract most commonly occurs in advanced life, at which period the proportion of fluids to the solids is considerably diminished, and as correctly observed by Mr. Dixon, when the lens becomes cataractous in old persons, "the change seems to consist in a process of drying and atrophy of its fibres."[2]

Again, it is now a well-established fact, that cataract is a frequent consequence of diabetes. Is this not to be explained by the abnormal density of the fluids of the system resulting from the excessive excretion of fluid by the kidneys; and if this opacity is not always produced, may it not be owing to the water being replaced by the great quantity ingested, uncontrollable thirst being a constant attendant on the disease?

M. Bernard states that it is difficult to deprive the organism of its water, but he has overlooked the fact that this may be effected by certain medicines, as croton oil, tartar emetic, and the hydragogue cathartics, and it is the constant result of several diseases, as diabetes, malignant cholera, profuse serous diarrhœa, leucorrhœa, &c.

In malignant cholera the exosmose of water into the intestines is enormous; the blood is so impoverished of its water that it becomes thick and dark as molasses. Is opacity of the lens one of the consequences of the loss of fluids in this disease? We are unable to answer this question, for we are not aware of any examination of the lens having been made after death from this disease. But we have often noticed a dulness and loss of transparency of the cornea, preceding death from this affection.

Artificial cholera may be produced by large doses of croton oil, or by repeated doses of emetic tartar, and experiments might be made on animals which would determine whether cataract is a consequence of the loss of fluid thus occasioned; and we would ask the attention of experimental physiologists to the subject.

Long continued copious serous diarrhœa, profuse leucorrhœa, and other exhausting fluid evacuations, impoverish the organism of its fluids, and, if our views be correct, must favour the formation of cataract.[3]

If it be objected to this that no such result has ever been noticed, let it

[1] Lecorché, *Archives Gen.*, May, 1861, p. 737.

[2] Guide to the Practical Study of Diseases of the Eye, 2d ed., p. 216.

[3] There may be various other obscure diseases, which also alter the normal density of some of the fluids, and thus impair osmotic action.

be remembered that it is only within a very few years that the connection between diabetes and cataract has been recognized, and that when attention shall be directed to this subject a similar connection may be discovered in other affections.

Should further investigations show that the long continued impoverishment of the blood of its water impairs the osmotic nutritive functions of the lens so as to produce opacity of that body, may we not hope that in some of such cases, by supplying to the organism its lost water, or by adopting the suggestion of Dr. Richardson or the practice of M. Sperino, the nutritive actions of the lens may be restored, the progress of the opacity arrested, and even, as occurred in the experiments of Kunde, Mitchell, and Richardson, that its transparency may be restored.

In very advanced age, it may not be possible to restore the proportion between the fluid and solid constituents of the body, for to do this would be to rejuvenate the individual, and senile cataract may therefore be regarded as beyond our therapeutical resources, as will be also those cases in which the affection has advanced to that stage where the lens tubes have become broken up and actual structural alterations have taken place.

Congenital and traumatic cataract must be equally intractable to medical treatment, neither resulting primarily from impaired nutrition. The former is the consequence of arrest of development; and the latter is produced by exudation of lymph on the capsule, the result of inflammatory action. The capsule is then, of course, rendered incapable of performing its osmotic functions.

But when cataract occurs prior to senility—without any obvious cause—when the opacity has not far advanced, and especially when the impaired nutrition causing the opacity, is the sequel of exhausting evacuations, is it unreasonable to hope that the progress of the change in the lens may be arrested, and even a retrograde metamorphosis effected?

The loss of transparency of the lens almost always commences in the layer of nucleated cells which connect the body of the lens to its capsule, the anterior marginal cells being first affected—the opacity proceeds in a centripetal direction implicating next the superficial softer fibres, and it is usually not until a late period that the denser fibres constituting the nucleus become affected. The mere arrest of the affection in its early stages while the nucleus is still clear, would be a great boon to the patient.

We might dwell further on this subject, for many points remain still to be developed, but we abstain for fear of too long trespassing on the patience of the Fellows of the college.

We shall besides have accomplished our object if we have succeeded in awakening attention to the subject, and have thrown some light on the pathology of cataract—if we have excited the suspicion of our hearers that the conviction under which we have long rested of its being beyond the therapeutic resources of our art to retard, or in any degree control the formation of cataract, may not be well founded, and if we have indicated the proper direction in which our researches should be pushed in order to discover the means, if such exist, of attaining this very desirable object.

1863. *June* 3. *On Heart Disease in the Army.*—Dr. Henry Hartshorne made the following remarks on this subject:—

Among the chronic affections of soldiers, which are best studied in hospitals remote from the field, is one which does not seem to have met, as yet, with full appreciation by medical officers, inspectors, and pension

surgeons. If the view which I hold be correct, the subject is of enough importance to deserve careful consideration by all who are interested in the health of the army. The affection to which I allude may be designated as *muscular exhaustion of the heart.* Although examples of it occur in all our military hospitals, I am acquainted with but one distinct published recognition of it; in the address of Dr. A. Stillé, before the Philada. County Medical Society, delivered and published in February, 1863. Although Dr. Stillé designates the disorder described by him as "palpitation" of the heart, his account otherwise agrees so well with my own observations, that I infer a general identity of the cases studied by us.

To be distinct in my description, it will be necessary first to say, that, during a seven months' term of service in an army hospital, attending in a ward averaging about 80 patients, I have met with the usual variety of cardiac affections. Acute endocarditis and pericarditis were the most rare. Of valvular disease a few instances presented themselves; but knowing the lax manner in which, at the beginning of the war, the examination of recruits was conducted, it was impossible to judge satisfactorily of their antecedents or origin. Dilatation of the heart, with or without the signs of thickening of the walls, occurred in quite a number of cases; especially dilatation without evidence of true muscular hypertrophy. But, although a portion at least of these cases ranged themselves under the same probable causation as those to which I wish to call particular attention, yet the large *majority* of examples of heart-disorder, under my observation, were not cases of either form of enlargement of the heart. Exclusive, then, of a very few instances of valvular disease; of a few more of pericarditis with effusion; and several of dilatation with hypertrophy, and of dilatation with attenuation; there yet remained two other classes of heart derangement in our army wards. One, not rare anywhere, was *palpitation,* or functional disturbance of the heart's action, from sympathy with irritated stomach, from nervousness, abuse of tobacco, &c.; a symptom frequently connected, in our cases as elsewhere, with anæmia. But, lastly, the largest number of all must be separated from all of these, and may be properly designated, so far as I can understand them, as cases of *cardiac muscular exhaustion.*

The symptoms of this were, rapidity with comparative feebleness of the pulse while the patient was at rest; great acceleration of the heart's movement on the *slightest* exertion; an impulse which, in proportion to its acceleration, was rather below than above the normal average of force, and was sudden and short, not heaving; dyspnœa or "shortness of breath" after moderate exertion, especially if continued. The general condition of the body accompanying these symptoms was not uniform. Mostly anæmic at first, or cachæmic, as were nearly all the men sent to our hospitals from the army of the Potomac during the latter half of last year—the cure of the anæmia was not nearly always the cure of the heart affection. There remained with us, after several months, a number of men, some of whom had the *aspect* of average health; with sufficient flesh, fair colour, and even tolerable muscular strength; but with a pulse of 85 to 95 when at rest, and running up to 120 or 130 upon walking slowly a few yards; and overcome altogether by standing for a few hours with muskets as hospital guards, or acting even as nurses or messengers. The physical signs observed in these cases were as follows: No extension of dulness of resonance on percussion (I mean now in the *majority* of these cases; having already mentioned that several instances of dilatation occurred in the same

wards) beyond the usual limits, and sometimes being even less than natural; impulse, as already stated, without unusual force, and especially deficient *relatively* to its acceleration; having also, a short, although hardly a jerking movement, but quite different from the *heaving* movement of concentric hypertrophy, and not lifting the ear or stethoscope so much even as in many cases of transient functional palpitation. Sounds of the heart, *free from murmur* in almost all the cases; in all that large number in which no complication could be supposed to exist with the cardiac exhaustion. Anæmic murmurs, even, were quite rare. There was present, however, a comparative deficiency in duration and loudness of the first sound, and an approximation of it in character to the second sound; similar to that which is described by Stokes (although the same sign had been observed by Laennec, and was still more clearly defined by Louis) as occurring in softening of the heart in typhus or typhoid fever. In instances in which great debility, from intermittent disease, existed, the sounds were both quite deficient in strength, while the impulse was very feeble, and the rapidity of the heart's action was extreme. The last case in which my attention was called to these signs was that of R. K——, a member of the Anderson Troop, of this city, who, after long and severe hardship and exposure, was attacked with typhoid fever followed by acute phthisis, and died under my care in May, 1863. The pulse of this patient, for *more than a month* before his decease, would have been pronounced by any physician to be that of a *moribund* person; of one who could not live forty-eight hours, and the heart sounds and impulse were correspondingly rapid, short, and weak. Having, from previous attendance, some years since, known his ordinary pulse which was not peculiar, I concluded that this state of his circulation must be owing to a condition of the heart identical with what I have described as occurring in our hospital patients, and which became familiarly known among us at the hospital as "trotting heart."

Autopsic examination was not available to any extent in the investigation of these cases; since the affection, in the hospital at least, was not mortal. In inspecting the bodies of some patients, who died from other causes, whose circulatory apparatus had presented the symptoms above described, we found the heart attenuated, flabby, and pale. No minute examination of it was made in either of these, our attention being called to the organs more especially involved in them. While thus without direct evidence of fatty or other degeneration of the heart in the typical cases considered, I entertain no doubt of the affection being essentially of an *atrophic* character, of which such degeneration would be a natural sequence or attendant, if circumstances did not favour restoration to health.

Allusion has been made already to the analogy suggested by the description by Dr. Stokes, of softening of the heart in typhus fever. The most important difference between this and soldiers' heart-exhaustion is probably connected directly with the dissimilarity in causation, in all respects except in the induction of atrophy in both. In typhus or typhoid fever, the morbid state of the blood—the *pyrosis*—alters the nutrition of the heart as well as its action. In the soldier, the heart is injuriously affected by long-continued over-exertion, with deficiency of rest, and, often, of nourishment.

To explain this more fully, we must recall the circumstances of the peninsular campaign of the army of the Potomac, from which most of our cases were brought; holding in view, at the same time, a very familiar

physiological principle in regard to nutrition. This principle is, that while a muscle, or other organ, will grow stronger and larger with increased exercise, so long as sufficient intervals of *repose* are allowed, and sufficient *nourishment* and other healthy conditions of repair are obtained; the contrary effect, or exhaustion and atrophy, will follow an increase or excess of exertion, without sufficient repose, food, or other healthy conditions. Now, in the campaign of McClellan on the peninsula, the soldiers suffered from great and prolonged over-exertion with the most unfavourable conditions possible—privation of rest, deficient food, bad water, and malaria. The heart, being called upon to supply the demands of the overtasked body, must, in such a case, become weakened, and that weakness is slow in being recovered from.

The only other supposable hypotheses in regard to the affection under consideration are:—

1. That it is merely a symptom of general *anæmia.*
2. That it is a *scorbutic* symptom; and
3. That it is a variety of *palpitation*, dependent on usual causes, such as excessive use of alcohol, tobacco, or coffee, or self-abuse.

As to anæmia, it has already been said, that in a number of cases, the heart-affection lasted long after the patients ceased to be anæmic, when they had enjoyed good appetite and digestion for two or three months, and had gained flesh and colour.

Scorbutus undoubtedly was a prominent element in the pathological state of very many of the patients from the campaign of the peninsula. Its recognition was of the highest importance; but, as to its relation to the "trotting heart" of our soldiers, setting aside the indefiniteness yet belonging to the use of the term "scurvy" as an entity, it may suffice to remark, that, as in the case of anæmia, the scorbutus was cured, but the heart-disorder remained long afterwards.

Nor can I think of assenting to the inclusion of our cases under the term of palpitation of the heart. The cardiac movement was different in character (as already described) from ordinary sympathetic or nervous palpitation; less heaving in impulse, more constant in character, and much more susceptible of increase by the slightest exertion. Of the ordinary causes of palpitation, some were present, of course, among the soldiers. Excessive use of whiskey, of tobacco, and, possibly, even of coffee, was not absent altogether, even in the hospital; masturbation, in some cases, was not impossible. But, bearing all these in mind during the almost daily study of these cases for months, with all the opportunities for vigilance furnished by the régime of an army hospital, my conviction was very positive that none of these causes could have more than a partial or secondary influence in producing the condition of the heart described. I believe it to be most correctly designated as cardiac muscular exhaustion and atrophy.

In regard to the *prognosis* of this affection, my experience has been sufficiently extended only to justify the expectation that recovery would be slow, but might be hoped for under the most favourable circumstances, in young patients of previously good constitution. Several months of rest and treatment in the hospital failed to do more than *improve*, without nearly curing, a large proportion of our well marked cases.

The availability of these men for active service constitutes an important question. Judging from what I have seen, I think it can hardly be a mistaken opinion that they are entirely unfit for ordinary field service in

the army. They would soon be broken down by the "double quick," or even by the knapsack and musket alone. It would, therefore, be not cruelty, but false economy, to compel them to undertake duty of which they are really incapable. No doubt many, perhaps most of them, would be quite able to do light service in various ways; but I am well satisfied that it would be cheaper and wiser, as well as more just, to discharge them, than to return them to regimental duty before the exhausted heart has had time for full recuperation.

*Aug. 5th. Report of several Cases of Stone.* Dr. DAVID GILBERT offered the following report:—

I last winter reported to the College six cases of successful lithotomy which were remarkable on account of the advanced age of the patients. None were under fifty years old, whilst one was seventy-four, another seventy-eight, and yet another over eighty-one. I desire now to present two other cases, in which the size of the stones was much larger than ordinary.

I was called to the first of these, Mr. Beesly, aged twenty-nine years, on the 7th of June last. The rational symptoms of stone were marked. The sound was introduced on the following day, and the presence of a large calculus discovered. Two days subsequently the lateral operation was performed. Both lobes of the prostate were incised, on account of the anticipated large size of the stone. The extraction was accomplished with difficulty; no forceps which we had, or could procure, being large enough securely to grasp the calculus. Its hardness, as well as the inadequate size of the crushing instruments, rendered it impossible to break the stone into fragments. It was finally removed by the largest forceps in our possession, with the aid of the lithotomy scoop in the hands of Dr. R. J. Levis, who was my assistant on the occasion. The patient has made a good recovery. There was little after suffering, even in the wound, when the urine was passed. The patient engaged in his ordinary vocation, that of a shoemaker, at the end of the seventh week after the operation. The stone measures $7\frac{1}{2}$ inches in its largest, and $6\frac{1}{2}$ in its smallest circumference, and weighs 6 oz. It belongs to the uric or lithic acid variety, judging from its external appearance.

The second case is that of Mr. Hellerman, æt. 49 years, also a shoemaker. He was brought to me from the country on the 30th of July ult. His system being in a favourable condition, although his sufferings were great, the operation was performed on the 1st inst. The patient has been in a very favourable condition since the operation. He is now in the fifth day; free from suffering except that which is caused by the passage of the urine through the wound. His pulse is full, soft, and regular, and but 72 beats to the minute. Since the second day after the operation, half of the urine has passed through the urethra, which is very unusual. Every other symptom is favourable to a speedy recovery. This stone weighs two ounces, and from its appearance belongs to the oxalate of lime or mulberry variety.[1]

In examining the reports of cases we find but few calculi removed in modern times that weigh more than one ounce. The older European authors mention cases in which the calculi weighed from ten up to fifty ounces, but in this country there are none reported even as heavy as ten ounces. It is to the credit of modern surgery that urinary concretions are usually detected early and operated for before they attain to so

[1] May 16. This case recovered.

large a size. The escape of this largest from early detection may be accounted for from the fact that the patient had for many years been under the care of homœopathic practitioners, who treated him for "dyspepsia with sympathetic irritation of the urinary organs." When I informed him that there was stone, he was greatly surprised, and he stated that this was the first time that such opinion was given in his case.

My friend Dr. J. J. Reese, late Professor of Chemistry in Pennsylvania College, writes me as follows :—

"I have analyzed the two large calculi you left with me, and the following are the results :—

"The largest one is composed of a crust (less than a quarter of an inch in thickness) of *uric acid*, and the remainder of *oxalate of lime*. The other one consists of *oxalate of lime* (mulberry calculus)."

*Oct. 7th. On the resemblance of "Spotted Fever" to certain European Epidemics.*

Dr. Henry Hartshorne called attention to the points of similarity existing between the present "spotted fever" and a disease occurring epidemically at several times and places in Europe; an account of which is given by Boudin in his "*Traité de Géographie et de Statistique Médicales et des Maladies Endemiques.*" This, the "*méningite cérébro-spinale épidémique*" of some French authors, was by the Germans called "*cerebral typhus*," and by the Italians "*tifo apoplettico tetanico.*" While Paumier describes something very much like it at Paris in 1568, the first clearly recognized occurrence of it was at Geneva in 1805; after which it was traced in a number of different localities on the continent in 1806–7, 1811, 1813–14–15–16, and 1823. At Geneva "the characters described were: sudden attack in the night, vomiting of green matter, atrocious cephalalgia, spinal rigidity, difficulty of deglutition, convulsions, nocturnal exacerbations, petechiæ, death occurring after from twelve hours to five days of illness."[1] At Grenoble, in 1814, one variety was observed with tetanus, and another without tetanus. In the department of Landes, 1837, there was also remarked, in certain cases, exaltation of the tegumentary sensibility. The disease attacked persons of all ages, and both sexes, although the smallest number of cases occurred in females. Much the greatest number of these epidemics broke out in garrisoned towns or among the regiments of the army; sometimes among galley-slaves. A tendency to *localization*, in quarters, houses, or families, with an "irradiation" therefrom, was very marked. In regard to season, the largest proportion of cases occurred in February, January, and December; the smallest in August and September. Autopsy discovered, in many instances, no appreciable anatomical lesion; in others, serous inflammations, especially cerebro-spinal, proceeding in a few cases to the formation of pus. Boudin remarks upon the pathological analogy between this disease and puerperal fever. The mortality of the affection was always great. At Rochefort, 1834, of 222 ill, 174 died; in Naples, 1841, of 218, 102 died. The only treatment in which, after considerable experience, Boudin placed any confidence, was that in which opium was used remedially. "To oppose a medicinal to a morbid diathesis" was his principle. For this purpose he resorted, in the beginning, to a tolerably full dose of opium (50 centigrammes to 1 gramme), after which it was continued in fractional quantities, according to the case (5 to 10

[1] Buodin, op. citat., tome ii. p. 567.

centigrammes every half hour). An *opiate sleep* was often followed by convalescence.

Dr. H. Hartshorne wished to lay emphasis especially upon the general resemblance in symptomatology of these epidemics to our "spotted fever;" upon their general (though not universal) association with the circumstances of war, or, at least, of military régime; the preference evinced by Boudin and others for the designation "cerebral typhus" rather than "cerebro-spinal meningitis;" and, lastly, upon the strongly pronounced opinion of Boudin, based upon observation, in favour of the opiate treatment.

1864. *Feb. 3d. Ossification of Crystalline Lens.*—Dr. HUNT presented a specimen of this kind removed from a boy of sixteen, one of whose eyes had been disorganized from infancy, probably from an attack of purulent ophthalmia. Sympathetic disturbance of the sound eye had existed from the time of the original attack, manifesting itself in constant photophobia, both deep-seated and supra-orbitar neuralgia, and conjunctivitis. There was no staphyloma.

Exacerbations of these symptoms were frequent, depending on the weather, and on the boy's general condition. His education had, of course, been materially interfered with, although his natural abilities were good. The diagnosis that the symptoms depended on the old diseased eye was confirmed by the results of the operation.

This consisted in removing the anterior half of the globe. The cornea and the remnants of the ciliary processes, with the peculiarly altered lens adhering to them, were removed. The eye collapsed, and recovery was rapid.

Vision of the sound eye at once improved, and in two months the patient was enabled to walk with head erect, without intolerance of light or pain, and with vision completely restored.

An artificial eye removed every trace of deformity.

*Cerebro-Spinal Meningitis.*—Dr. WALTER F. ATLEE communicated an account of ten cases of a disease before unseen by him, and believed by him to correspond to what is styled *cerebro-spinal meningitis*, which he has recently witnessed at St. Vincent's Home, an institution for young children under the care of the Sisters of Charity, situated at the corner of Eighteenth and Wood Streets.

The symptoms presented by these cases were, generally, as follows:—

They were suddenly seized with vomiting, the face was bluish, the breathing rapid, and the pulse irregular. The pupils were always enormously dilated. The position they maintained in bed was peculiar; the spinal column was bent far backwards, and the palms of the hands were pressed against the posterior part of the head, which was turned far back. The exaltation of sensibility of the skin was very great, so much so that the children could not bear to be touched; they would cry for drink, yet could not bear to be moved to have the cup placed to the mouth. All passed water freely, except in one case (Case VI., of the list given below), where none escaped externally for the first thirty-six hours. The bowels were confined in all, excepting in one case (Case IV.), where the feces passed in a convulsion, with which the disease began; and in one (Case V.), where, on the first day, there was purging of pure blood. Four of the cases had epileptiform convulsions (Cases II., III., IV., and VII.); in one (Case

IV.), the disease thus commenced; two (Cases II. and VII.) died in convulsions; and the fourth (Case III.) recovered. In one case (Case VI.) after death the body was covered with spots resembling small bruises. In another case (Case VII.) there were spots on the lower limbs like flea-bites, on the second day, that disappeared on the third.

No *post-mortem* examination was made.

The treatment consisted in the application of irritants to the back, and in the administration of opium, one-twelfth of a grain of the extract being given in syrup every three hours. Brandy, wine-whey, and essence of beef were given freely.

The cases are as follows:—

Case I. Female; a child 4 years old; taken sick December 30th; died February 3d, after gradually growing more and more thin and weak.

Case II. Female; a child 4 years old; taken sick December 31st; died in a convulsion in less than 36 hours.

Case III. A male child 2½ years old, taken sick January 1st; recovered after a long convalescence, during which he had eight different attacks of convulsions.

Case IV. A male child, 3 years old, taken sick January 3d; died January 5th, respiration becoming very rapid, and skin blue, though percussion showed the lungs to be unembarrassed.

Case V. A male child, 3 years old, taken sick January 4th; recovered, and rapidly, so as to leave the infirmary well on the 11th, or one week afterwards.

Case VI. A male child, 2 years of age, taken sick January 10th; died on the 12th.

Case VII. A male child, 2 years of age; taken sick January 10th; died on the 12th, in a convulsion.

Case VIII. A female child, 4 years of age; taken sick January 10th; taken out of the Home, on the 14th, by the mother, who was sure, from the position maintained by the child—the head thrown far back, and the back bent—that some injury had been received by the child's spine.

Case IX. A female child, four years of age; taken sick January 11th; recovered.

Case X. Sister L——, aged 19 years; taken sick on the 13th January; recovered.

The sister's case is as follows:—

January 13th: no appetite. January 14th—10 o'clock A. M.: chilly, face leaden, nausea, violent headache, pulse about 90, and feeble. 2 30′ P. M.: had vomited, face somewhat flushed, pain in head more violent, pupils as large as if from action of atropia, pulse irregular. 6 o'clock P. M.: great pain in the head, and in the back. Ordered one-fourth grain of extract of opium every three hours, two grains of chlorate of potassa every hour, chloroform to the back of the neck, croton oil to the spine, a hot salt bag to the loins, beef-essence, wine-whey, and punch. January 15th—9 A. M.: pain most violent in the back of the head, when the hands were pressed as in the children. 12½ P. M.: pupil more contracted. 6 P. M.: pulse still irregular and feeble. January 16th—9 A. M.: pulse regular and 88, pupil almost natural, and headache less; had slept, for the first time, from 12 to 1, and from 4 to 5 o'clock. January 17th: had slept four hours; the opium was gradually left off from to-day. January 19th: bowels opened for the first time, by castor oil, twice repeated.

The institution contains about 80 children, boys and girls, in equal num-

bers, of whom nine were attacked, five boys and four girls; and six sisters, of whom one was attacked. Of the nine children who were sick, five died, three recovered, and one was removed, in which case the result is unknown. The sister recovered.

It is worthy of mention that the disease broke out two days after clothing had been placed upon the children that came from Manayunk. It is impossible to find, however, that this clothing had been in contact with any persons affected with the so-called spotted fever, which is said to prevail in that part of the country. The sister who was attacked was not the one who was attached to the infirmary, or one more in contact with the sick than another.

Dr. W. Jewell presented his Annual Report on Meteorology and Epidemics, as follows:—

The meteorology of the year will be found in the table 1, politely furnished by Prof. Kirkpatrick of the Philadelphia High School. Here we have represented the mean temperature of the year 54.13°, which is 1.55° warmer than in 1862. The highest point of heat attained was 95° on August 10th, within a half degree of the highest point in 1862, on the 7th of July. The mean daily range was 5.39°. The lowest degree was 5°, on Feb. 5th, three degrees lower than Dec. 21, 1862. The coldest day was the 4th of February.

The mean daily pressure of the atmosphere was 29.864 inches of the barometer, and the mean amount of humidity in the air was 67.2 per cent. of saturation.

The rain and snow-fall amounted to 49.642 inches, which exceeded the rain for 1862 by 3.986 inches, and was greater in amount by 4.314 inches than the average for the last 12 years, while the number of days on which rain fell, viz., 143, was 9 more than in '62 and 15 more than the average for twelve years.

The amount of rain that fell during the spring and summer was 28.542 inches, being 8.210 more than in 1862. While the number of days it rained amounted to 82, which exceeded the number in 1862 by 20 days. The seasons therefore have been uncommonly wet, and whatever influence they may have exerted upon the character and fatality of our diseases, the heavy rains from time to time have been useful in deluging our streets and gutters, carrying off an immense quantity of putrid offal from our neglected thoroughfares.

*A General Abstract of the Meteorological Observations made at Philadelphia during the year* 1863.—By Prof. James A. Kirkpatrick.
Latitude 39° 57½′ N. Longitude 75° 10½′ W. from Greenwich. Height of Barometer fount, 60 feet above mean tide in the Delaware River.

| 1863. | Thermometer. | | | | | | | | | Barometer. | | | | | | | | Dew Point. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Months. | Maximum. | Minimum. | Range. Monthly. | Range. Mean daily. | Mean of daily oscillations. | Means. 7 A. M. | Means. 2 P. M. | Means. 9 P. M. | Means. Average. | Highest. | Lowest. | Range. Monthly. | Range. Mean daily. | Means. 7 A. M. | Means. 2 P. M. | Means. 9 P. M. | Means. Average. | Means. 7 A. M. | Means. 2 P. M. | Means. 9 P. M. | Means. Average. |
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | inch. | inch. | inch. | inch. | inch. | inch. | inch. | inch. | ° | ° | ° | |
| January . . . | 61 | 14 | 47 | 5.60 | 12.90 | 33.95 | 40.95 | 36.64 | 37.18 | 30.571 | 29.127 | 1.444 | .266 | 29 925 | 29.867 | 29.905 | 29.899 | 27.80 | 29.68 | 29.24 | 28.90 |
| February . . . | 54 | 5 | 49 | 7.54 | 13.57 | 30.46 | 37.70 | 34.04 | 34.07 | 30.671 | 29.345 | 1.326 | .265 | 30.031 | 29.977 | 30.024 | 30.011 | 24.10 | 25.33 | 25.09 | 24.84 |
| March . . . . | 63 | 15 | 48 | 6.47 | 13.81 | 32.29 | 40.94 | 35.82 | 36.35 | 30.384 | 29.422 | .962 | .214 | 29.882 | 29.829 | 29.880 | 29.864 | 25.38 | 25.54 | 26.83 | 25.92 |
| April . . . . . | 71 | 30 | 41 | 5.41 | 14.90 | 43.95 | 54.35 | 47.40 | 48.57 | 30.185 | 29.260 | .925 | .164 | 29.788 | 29.752 | 29.808 | 29.782 | 33.55 | 33.94 | 36.72 | 34.74 |
| May . . . . . | 90 | 40 | 50 | 5 43 | 19.15 | 59.32 | 71.76 | 62.64 | 64.57 | 29.975 | 29.295 | .680 | .085 | 29.783 | 29.736 | 29.769 | 29.763 | 50.00 | 49.10 | 52.19 | 50.43 |
| June . . . . . | 91½ | 52 | 39½ | 5.18 | 16.02 | 65.78 | 74.75 | 67.90 | 69.48 | 29.994 | 29.321 | .673 | .083 | 29.743 | 29.712 | 29.756 | 29.737 | 54.22 | 53.94 | 55.13 | 54.43 |
| July . . . . . | 88 | 65 | 23 | 3.22 | 10.81 | 74.40 | 80.24 | 76.32 | 76.99 | 29.988 | 29.524 | .464 | .079 | 29.800 | 29.780 | 29.807 | 29.796 | 66.83 | 66.71 | 67.44 | 67.09 |
| August . . . . | 95 | 58 | 37 | 3.79 | 16.00 | 74.95 | 85.50 | 78.05 | 79.50 | 30.119 | 29.699 | .420 | .100 | 29.878 | 29.850 | 29.868 | 29.865 | 66.00 | 63.00 | 65.00 | 64.67 |
| September . . . | 83 | 41 | 42 | 4.22 | 14.65 | 61.57 | 70.68 | 64.70 | 65.65 | 30.312 | 29.281 | 1.031 | .116 | 29.940 | 29.896 | 29.939 | 29.925 | 52 51 | 54.32 | 54.47 | 53.77 |
| October . . . . | 74 | 32 | 42 | 4.93 | 16.10 | 49.79 | 61.89 | 54.18 | 55.29 | 30.245 | 29.557 | .688 | .108 | 29.920 | 29.885 | 29.925 | 29.910 | 43 29 | 43.54 | 44.93 | 43.92 |
| November . . . | 69 | 25 | 44 | 6.35 | 14.37 | 42.45 | 52.63 | 46.12 | 47.07 | 30.249 | 29.434 | .815 | .185 | 29.863 | 29.804 | 29.854 | 29.840 | 34.39 | 34.16 | 35.00 | 34.52 |
| December . . . | 60 | 15 | 45 | 6.54 | 13.26 | 30.87 | 39.13 | 34.68 | 34.89 | 30.495 | 29.167 | 1.328 | .223 | 29.999 | 29.935 | 29.981 | 29.972 | 23.59 | 25.74 | 25.10 | 24.81 |
| Annual means . | 95 | 5 | 90 | 5.39 | 14.63 | 49.98 | 59.21 | 53 21 | 54.13 | 30.671 | 29.127 | 1.544 | .157 | 29.879 | 29.835 | 29.877 | 29.864 | 41.81 | 42.08 | 43.10 | 42.33 |
| Winter . . . . | 64 | 5 | 59 | 6.53 | 13.07 | 32.22 | 39.47 | 35.13 | 35.61 | 30.671 | 29.127 | 1.544 | .243 | 29.963 | 29.913 | 29.955 | 29.944 | 26.12 | 27.43 | 27.29 | 26.95 |
| Spring . . . . | 90 | 15 | 75 | 5.77 | 15.95 | 45.19 | 55.68 | 48.62 | 49 83 | 30.384 | 29.260 | 1.124 | .154 | 29.818 | 29.772 | 29.819 | 29.803 | 36.31 | 36.19 | 38.58 | 37.03 |
| Summer . . . . | 95 | 52 | 43 | 4.06 | 14.28 | 71.71 | 80.16 | 74.09 | 75.32 | 30.119 | 29.321 | .798 | .087 | 29.807 | 29.781 | 29.810 | 29.799 | 62.35 | 61.22 | 62.62 | 62.00 |
| Autumn . . . . | 83 | 25 | 58 | 5.17 | 15 04 | 51.27 | 61.73 | 55.00 | 56.00 | 30.312 | 29.281 | 1.031 | .136 | 29.908 | 29.862 | 29.906 | 29.892 | 43.40 | 44.01 | 44.80 | 44.07 |
| For eleven years | 100⅛ | —5½ | 106 | 5.55 | 15.14 | 49.71 | 59.90 | 53.14 | 54.25 | 30.704 | 28.884 | 1.820 | .156 | 29.889 | 29.849 | 29.875 | 29.871 | | 43.40 | | |

Births.—During the year there were 15,293 births recorded in the registration office. This is an increase of 552, or 3.74 per cent. above those for 1862. Compared with the number of deaths, it shows an increase of the population of ten in every hundred; thus, the deaths amounted to 14,220, while the births were 15,293—an increase of births over the deaths of 1,073, equal to 7.54 per cent.

The accompanying table gives the total number of births during the year, with the sexes, and shows the births credited to the different months with the still-born and the twins, also the births of coloured children.

| 1863. | | Births. | | Black. | | Still Born. | | |
|---|---|---|---|---|---|---|---|---|
| Months. | Total. | Male. | Female. | Male. | Female. | Male. | Female. | Twins. |
| January . . . | 1,363 | 731 | 632 | 11 | 13 | 36 | 26 | 10 |
| February . . . | 1,296 | 691 | 605 | 14 | 7 | 31 | 19 | 16 |
| March . . . . | 1,405 | 723 | 682 | 12 | 11 | 21 | 22 | 18 |
| April . . . . | 1,244 | 651 | 593 | 15 | 8 | 55 | 26 | 14 |
| May . . . . . | 1,139 | 582 | 557 | 7 | 12 | 27 | 28 | 9 |
| June. . . . . | 1,105 | 577 | 528 | 17 | 8 | 31 | 29 | 11 |
| July . . . . . | 1,189 | 636 | 553 | 7 | 12 | 28 | 38 | 12 |
| August . . . . | 1,306 | 647 | 659 | 8 | 21 | 30 | 14 | 20 |
| September . . . | 1,323 | 725 | 598 | 12 | 11 | 45 | 25 | 8 |
| October . . . . | 1,259 | 683 | 576 | 20 | 16 | 37 | 33 | 6 |
| November . . . | 1,324 | 706 | 618 | 15 | 11 | 39 | 23 | 14 |
| December . . . | 1,340 | 690 | 650 | 13 | 11 | 52 | 28 | 10 |
| Total . . . | 15,293 | 8,042 | 7,251 | 151 | 141 | 432 | 311 | 148 |

The month of March yielded the greatest number of births, 1,405, and June the least, 1,105.

The male births amounted to 8,042; the female births to 7,251. An excess of males of 791, or 10 per cent.

The still births were 743; of which 432 were males; while only 311 were females, nearly one-third less. This disproportion of the sexes in still births is not without interest. The disproportion is 4.50 per cent. greater than in 1862.

The monthly record of still-born children is not in the same ratio with the births. It will be observed that the highest number of still births was 81, in April, which furnished only 1244 births; while the lowest number in any month was in March, viz., 43, and this month gave 1405 births.

By computing the number of births for each month during the past three years of the operation of the registration law, and arranging them as we have done on a former occasion, placing those months affording the highest number in the scale of births in their numerical order, and in an opposite column the corresponding months of conception, and we arrive at precisely similar results as formerly, and as shown by Dr. Emerson and M. Villermé of Paris, viz., that those months furnishing the lowest number of births correspond with the months of conception, July, August, and September, during the extreme heat of summer, as the following table will show:—

| Months. | Whole Number of Births. | Corresponding Months of Conception. |
|---|---|---|
| 1. March | 4298 | June |
| 2. January | 4261 | April |
| 3. December | 4046 | March |
| 4. November | 4008 | February |
| 5. August | 4001 | November |
| 6. February | 3998 | May |
| 7. September | 3990 | December |
| 8. October | 3943 | January |
| 9. July | 3865 | October |
| 10. April | 3695 | July |
| 11. June | 3602 | September |
| 12. May | 3598 | August |

According to these results fecundity is not only affected by the order of the seasons, as the extreme heat of the summer solstice, but also by endemic influences. It is well understood that during the three months, July, August, and September, our population is diminished directly by an increase of deaths, and as shown above, it may likewise be lessened through the same influence by diminishing fecundity.

This is a subject worthy of more enlarged investigation than could be offered in this report.

The births returned of coloured children amounted to 292. This is an increase of 16.33 per cent. over those registered for 1862, but a decrease below those for 1861 of 5.50 per cent.

The deaths of the coloured population were 767, showing a heavy per-centage over the births, equal to 162 per cent. This result indicates a rapid decline, provided the returns of births are made with any degree of accuracy.

Twin births registered, amounted to 148. The highest number born in any one month was 20, in August; the lowest, in October, six. No triplets were registered during the year.

The first ward with a population of 30,886 furnishes the greatest number of births, viz., 1,146—equal to 1 in every 27 of the population. The lowest number of births are set down to the fifth ward, viz., 371. This ward has a population of 24,792, and gives only 1 birth in every 67.

The 19th ward has a population of 38,828 souls; it is not, however, as productive as some other wards, producing only 1,122 births, or 1 in 35 of its population.

It will be observed that in all the wards except the second, third, fourth, fifth, seventh, eighth, ninth, and twenty-first, the births exceeded the deaths; even in the seventeenth and nineteenth wards, swarming with populations, not the most favourable for health, owing to crowded and ill-ventilated dwellings, imperfect drainage, unpaved streets, and numerous sources of foul and unhealthy emanations—the births exceeded the deaths.

The 20th, 16th, 12th, 22d, and 24th wards presented the greatest contrast between the births and deaths in favour of the forces of organic life and reproduction, when compared with their mortality. These statistics are an index of the prosperity or numerical growth of these several districts.

The daily average of births was 42. The 1st and 4th quarter of the year contributed the highest number of births, and the largest percentage; the 2d quarter the lowest, as follows :—

| | | |
|---|---|---|
| First Quarter, ending March 31 . . . . | 4,064 = | 26.57 per cent. |
| Second Quarter, ending June 30 . . . | 3,488 = | 22.81 " |
| Third Quarter, ending September 30 . . . | 3,818 = | 24.96 " |
| Fourth Quarter, ending December 31 . . | 3,923 = | 25.66 " |
| Total . . . . . | 15,293 = | 100.00 " |

MARRIAGES.—The accompanying table gives the number of marriages recorded during the year, with the ages of the parties married, and the percentage of men and women married, according to the different periods of life.

| 1863. | | AGES OF THE WOMEN. | | | | | | | | | | Total of the Men. | Percentage of the Men. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Under 20. | 20 to 25. | 25 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | Age not given. | | |
| AGES OF THE MEN. | Under 20. | 18 | 8 | | | | | | | | | 26 | .51 |
| | 20 to 25. | 654 | 1031 | 128 | 26 | | | | | | 8 | 1847 | 36.50 |
| | 25 to 30. | 244 | 925 | 388 | 87 | 6 | | | | | 5 | 1655 | 30.71 |
| | 30 to 40. | 79 | 311 | 377 | 256 | 25 | 2 | | | | 6 | 1056 | 20.86 |
| | 40 to 50. | 9 | 39 | 85 | 140 | 68 | 6 | | | | 3 | 350 | 6.91 |
| | 50 to 60. | 2 | 4 | 7 | 29 | 38 | 10 | 2 | | | | 92 | 1.81 |
| | 60 to 70. | | 1 | 1 | 6 | 5 | 11 | 1 | | | | 25 | .49 |
| | 70 to 80. | | | 1 | | 1 | 3 | 1 | | | | 6 | .11 |
| | 80 to 90. | | | | | | 1 | 1 | | | | 2 | .39 |
| | Age not given. | 4 | 6 | | | | | | | | 1105 | 415 | |
| Total of the Women. | | 1010 | 2325 | 987 | 544 | 143 | 33 | 5 | | | 427 | 4547 | |
| Percentage of the Women. | | 20.01 | 46.06 | 19.55 | 10.77 | 2.83 | .65 | .09 | | | | | |

There were 5474 marriages recorded during the year; an increase of 812, equal to 17.41 per cent. over those returned for 1862. This increase is an evidence of a far more strict compliance with the law of registration on the part of clergymen, rather than from an actual increase of the number of marriages solemnized. There is, however, a considerable defect in the returns made as to the relative ages of the parties wedded. The table shows that the ages of 415 of the men and 427 of the women married, equal to 9 per cent., have been omitted. This imperfection, owing in some instances to the carelessness of the officiating clergyman, and in others to a peculiar hesitancy of the persons about to be united, should not prevail in a document fraught with so great importance to the parties themselves and their heirs, in a legal point of view.

Of the parties married 1010, or 20 per cent. of the brides were under twenty years of age, while only 26, or 0.51 per cent. of the grooms were in their minority.

The popular age for marriage appears to have been between twenty and twenty-five. Within these ages, there were 2325, or 46 per cent. of all the women, and 1847, or 36.50 per cent. of all the men married during the year. Within the period of twenty-five years of age the brides are more numerous than the grooms. Beyond this age the brides decline, while the grooms increase in numbers.

Between the ages of twenty-five and thirty, there were 1655, or 31 per cent. of men, and 987, or 19.55 per cent. of women married.

There are only twenty-five marriages recorded between sixty and seventy, six between seventy and eighty, and two between eighty and ninety years of age.

The annexed table gives the nativity of the parties married :—

| *NATIVITIES.* | | BIRTH-PLACE OF BRIDES. | | | Total of Grooms. | Percentage of Grooms. |
|---|---|---|---|---|---|---|
| | | United States. | Foreign. | Not given. | | |
| BIRTH-PLACE OF GROOMS. | United States. | 2753 | 261 | 25 | 3039 | 57.73 |
| | Foreign. | 495 | 1721 | 10 | 2226 | 42.27 |
| | Not given. | 22 | 12 | 175 | 209 | |
| Total of Brides. | | 3270 | 1994 | 210 | 5447 | |
| Percentage of Brides. | | 62.12 | 37.88 | | | 100.00 |

Of the number of men married, 3039, or 58 per cent. were natives of the United States; of this number, 2753 married American women; 261 married foreigners, and 25 married those whose birth-places are not designated.

The number of men of foreign birth amounted to 2226, or 42 per cent., of whom 495 married American women, and 1721 married women of foreign birth. There were only ten instances of this class in which the nativity of the women was omitted.

Of the women married, 3270, or 62 per cent. were born in the United States. Of these, 2753 married American born men, 495 foreigners, and 22 were not designated.

There were 1194 women of foreign birth, equal to 38 per cent. married. 261 married men American born, and 1721 married men of foreign birth. Twelve were not designated.

In 2753 instances, equivalent to 50 per cent., both parties were American born, and 1721, equal to 31 per cent., they were of foreign birth.

*Deaths.*—The following table furnishes a summary of the interments in our city for the year 1863, as registered at the health office :—

| | | |
|---|---|---|
| White | 15,021 | |
| Coloured | 767 | |
| Total | | 15,788 |
| Males | 8636 | |
| Females | 7152 | |
| Total | | 15,788 |
| Male adults | 4143 | |
| Female adults | 3195 | |
| Total adults | | 7,338 |
| Male children | 4494 | |
| Female children | 3956 | |
| Total children | | 8,450 |
| Total | | 15,788 |
| From registered diseases in city | 12,944 | |
| " Stillborn | 743 | |
| " Old age | 234 | |
| " Unknown causes | 112 | |
| " External and accidental causes | 619 | |
| " Country | 825 | |
| " Gunshot wounds | 310 | |
| Total from all causes | | 15,788 |

By reference to the above summary, and to the tables which have been prepared to illustrate the prominent points of interest in our city mortality, in their several aspects, it will be seen that 15,788 deaths from all causes have been registered during the year 1863.

This is the highest death rate ever returned for a single year in our city, and presents an increase over those returned for 1862 of six hundred and ninety-one, equal to 4.57 per cent.

The whole number of deaths recorded include stillborn, old age, unknown, external and accidental causes, gunshot wounds, and deaths from the country. To arrive, however, at a more correct estimate of the true health of our city, it is proper to exclude the deaths recorded from stillborn, and those from the country, amounting to 1568, and confine the calculation to those from registered deaths in the city alone. These amount to 14,220.

If we estimate the increase of our population at three per cent. per annum, since the census of 1860, which gave us at that time 565,529, we have now a resident population, in round numbers, of 618,000 souls; this is by no means an exaggerated calculation, and is perhaps below the number for which we ought to receive credit.

From this standpoint, we have 23 deaths in every thousand of the living, which is equal to one in every 43.45 of the population.

As in 1862, so in '63, there has been an unusual excess of deaths in the male sex, amounting to 20 per cent. The deaths of males were 8636; females, 7152; excess, 1484. This inequality will be found in the numerous deaths among returned soldiers from the armies of the Union, amounting to 893.

The mortality among children was 8450, or only 1112 above those of adults, equal to 15 per cent. This inequality, like that of last year, is far below the ordinary standard, and is owing to the increased proportion of deaths of adults, occasioned by the influx of sick soldiers into our city.

The highest mortality in any one epoch of life was 3995, those under one year. This includes the stillborn, and is equal to 25 per cent. of the registered deaths.

The most fatal period of childhood in cities is between birth and the fifth year. Beyond this age, there is a rapid falling off in deaths until the fifteenth year, when the mortality begins to increase again, as the children approach manhood.

Out of 7981 deaths of children during the year under fifteen years of age, 3995 were in the first year; 1483 between one and two years; 1480 between two and five years; 719 between five and ten years, and 304 between ten and fifteen years. The next five years the death rate rose to 469, while in the following quinquennial period, from twenty to thirty, embracing early manhood, the deaths were nearly quadrupled, amounting to 1743.

According to these figures, it will be seen that 39 per cent. of our annual mortality was in children under five years (exclusive of stillborn). This death rate corresponds with that of the city of London (proper), according to Dr. Letheby's last report for 1862 and '63. In this report he remarks, "the proportion in the rest of London is about 44 per cent., and in England it is nearly 40." Compared with all England, therefore, and with other large cities in this country, this mortality is not excessive.

But when compared with the number of births during the year, the mortality is frightful, equal to about one death for every two children born!

This enormous excess of infant mortality should excite far greater attention from the philanthropist than is now given it. We offer no apology for the sanitary defects of our city, they are numerous, and add their full share as one of the causes for this unnecessary sacrifice of infant life; but there is another—and it is humiliating as well as discreditable to the mothers of our city to admit the fact—that the want of proper care, either through pride, ignorance, or neglect in the management of infants, is the principal agent of our infant mortality.

The several government hospitals located in our city, together with the exposures attendant on camp life and the chances of the battle-field, have contributed to swell our mortality, and have added to the list 893 deaths. Of these, 308 were from gunshot wounds; 123 from typhoid fever; 100 from diarrhœa; 57 from consumption of the lungs; 27 from smallpox; 29 from pyemia; and the remainder from chronic, scrofulous, and incidental diseases. At this point, we may, in passing, add our testimony to the great value of military hygiene. Though the statistics of the U. S army hospitals in this city are on a limited scale, still they confirm the views of experienced military surgeons abroad, and the results of investigations founded upon recent events in our own military history, that a greater number of soldiers fall victims to disease and death in consequence of unfavourable hygienic circumstances surrounding them, than from wounds inflicted in battle.

The principal number of deaths in these U. S. hospitals located in Philadelphia were among men brought from the battle-field, or from diseases contracted in camp and in barracks, and should not be charged to our city mortality. Again, it will be seen that 489, or 53 per cent. of the deaths were from preventable causes, while only 33 per cent. were from gunshot wounds; 97 were the result of accidents and constitutional causes not peculiar to a soldier's life.

The mortality from zymotic or epidemic and endemic or contagious diseases registers 3392. Of this number, 189 were brought from beyond the

limits for interment, and do not belong to our city mortality; hence, the deaths in the city from preventable diseases have been only 3203.

Notwithstanding the general increase of deaths for the year, it will be gratifying to allude to the decline of those from zymotics, which may be held up as the index to the good or bad sanitary condition of a neighbourhood. As will be seen, they have fallen below those for 1862[1] to the number of 148, equal to $4\frac{1}{2}$ per cent.

With every allowance for this decline, the death rate of preventable diseases continues far beyond the standard that might be attained, if a proper attention was given by the municipal authorities to sanitary improvements. While we are unwilling to hold out the idea that our city mortality will ever compare with that which exists in rural districts, because, as has been wisely said, "a penalty must always be paid for the privilege of civilization, and for the right of partaking of the greater luxuries of the metropolis;" still, there are sanitary reforms both necessary and desirable, apart from the unwholesome influences connected with trade and manufactures, which effected, would contribute materially to lessen the waste of human life, and to improve the public health.

The condition of the streets and sewers of our city under the immediate control of the authorities, constitute the most prevalent sanitary evils, while the dwellings of those who are compelled by poverty to live in crowded, ill-ventilated and badly lighted apartments, in the purlieus of the city and in narrow confined and filthy streets and courts, are subject to unhealthy influences that invite disease, and when attacked, their already enfeebled vital powers are incapable of resisting its rapid progress, and thus our mortality is augmented to a fearful extent.

It is in the power of the corporate authorities to correct the former evils, by the direct and frequent application of the broom and water, aided by the exercise of sanitary science. The latter, the homes of the poor, over which they have not the like power, will, when the example is offered their inmates, through clean streets and unobstructed sewers, be encouraged to improve and keep clean their miserable places of abode, and thereby check the accumulation of causes that have a depressing influence, and foster and develop endemic diseases of a low or malignant type.

The following table will furnish the diseases considered preventable, from which deaths have occurred during the year. It also presents the number and character of the deaths which have been charged to the different wards. These are the diseases supposed to have their origin in specific and local causes.

[1] 3351, deducting those from the country.

*Zymotic, Epidemic, and Contagious Diseases for* 1863.—Division 1. *Showing Sex and Age.*

| DISEASES. | TOTAL. | SEX. | | | | AGES. | | | | | | | | | | | | | | ADULTS. | MINORS. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | | |
| Cholera | 8 | 5 | 3 | 2 | .. | .. | 1 | .. | 1 | .. | .. | 1 | .. | 2 | 2 | 1 | .. | .. | .. | .. | .. | 6 | 2 |
| " infantum | 930 | 456 | 474 | 456 | 474 | 615 | 284 | 29 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 930 |
| " morbus | 28 | 18 | 10 | 7 | 3 | 5 | 1 | 1 | 1 | 2 | .. | 2 | 4 | 2 | 3 | 4 | 2 | 1 | .. | .. | .. | 18 | 10 |
| Diarrhœa | 315 | 207 | 108 | 63 | 65 | 65 | 35 | 11 | 3 | 2 | 12 | 54 | 40 | 34 | 17 | 21 | 10 | 11 | .. | .. | .. | 187 | 128 |
| Diphtheria | 434 | 218 | 216 | 208 | 210 | 38 | 78 | 191 | 86 | 19 | 6 | 6 | 2 | 3 | 3 | 1 | 1 | .. | .. | .. | .. | 16 | 418 |
| Dysentery | 176 | 92 | 84 | 51 | 42 | 30 | 26 | 23 | 11 | 1 | 2 | 10 | 11 | 12 | 13 | 17 | 12 | 8 | .. | .. | .. | 83 | 93 |
| Erysipelas | 74 | 39 | 35 | 17 | 22 | 28 | 1 | 4 | 1 | 4 | 1 | 4 | 7 | 10 | 3 | 4 | 4 | 3 | .. | .. | .. | 35 | 39 |
| Fever | 17 | 8 | 9 | 7 | 5 | 1 | .. | 2 | 5 | 3 | 1 | 4 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 5 | 12 |
| " congestive | 43 | 20 | 23 | 12 | 13 | 1 | 3 | 6 | 7 | 1 | 7 | 7 | 2 | 2 | 2 | 2 | 3 | .. | .. | .. | .. | 18 | 25 |
| " continued | 7 | 5 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " eruptive | 1 | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| " intermittent | 7 | 3 | 4 | 1 | 2 | 1 | .. | 1 | .. | .. | 1 | 2 | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | 4 | 3 |
| " malignant | 12 | 5 | 7 | 5 | 6 | 1 | .. | 4 | 1 | 3 | 2 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 11 |
| " petechial | 4 | 1 | 3 | .. | 3 | .. | .. | 1 | 2 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 3 |
| " remittent, bilious | 28 | 14 | 14 | 6 | 4 | .. | .. | 5 | 2 | 1 | 2 | 3 | 4 | 3 | 2 | 5 | 1 | .. | .. | .. | .. | 18 | 10 |
| " scarlet | 275 | 142 | 133 | 141 | 130 | 21 | 39 | 129 | 72 | 9 | 1 | 1 | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | 4 | 271 |
| " spotted | 49 | 33 | 16 | 30 | 14 | 4 | 2 | 10 | 12 | 10 | 6 | 1 | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | 5 | 44 |
| " typhoid, low | 487 | 341 | 146 | 85 | 60 | 1 | 7 | 27 | 33 | 27 | 50 | 147 | 87 | 45 | 30 | 19 | 11 | 3 | .. | .. | .. | 342 | 145 |
| " typhus | 131 | 69 | 62 | 43 | 33 | 4 | 4 | 18 | 21 | 13 | 16 | 19 | 6 | 16 | 10 | 4 | .. | .. | .. | .. | .. | 55 | 76 |
| " yellow | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| Hooping cough | 78 | 24 | 54 | 24 | 54 | 32 | 20 | 22 | 3 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 78 |
| Measles | 82 | 40 | 42 | 38 | 41 | 13 | 30 | 32 | 4 | .. | .. | 2 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 3 | 79 |
| Smallpox | 171 | 95 | 76 | 56 | 65 | 33 | 24 | 28 | 25 | 6 | 5 | 29 | 13 | 7 | 1 | .. | .. | .. | .. | .. | .. | 50 | 121 |
| Syphilis | 28 | 15 | 13 | 12 | 9 | 15 | 4 | 1 | .. | .. | 1 | 4 | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | 7 | 21 |
| Thrush or aphthæ | 6 | 4 | 2 | 3 | 2 | 4 | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | 5 |
| Total | 3392 | 1856 | 1536 | 1269 | 1257 | 913 | 560 | 545 | 293 | 102 | 113 | 298 | 186 | 141 | 88 | 80 | 45 | 27 | .. | 1 | .. | 866 | 2526 |

*Deaths from Zymotic Diseases in each Quarter of the Year* 1863.

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1st quarter, January, February, March | 566 | 349 | 217 | 166 | 169 | 61 | 51 | 120 | 58 | 20 | 25 | 91 | 56 | 32 | 22 | 10 | 11 | 9 | .. | .. | .. | 231 | 335 |
| 2d quarter, April, May, June | 596 | 316 | 280 | 221 | 233 | 95 | 88 | 141 | 71 | 30 | 29 | 55 | 28 | 21 | 12 | 13 | 9 | 3 | .. | 1 | .. | 142 | 454 |
| 3d quarter, July, August, September | 1618 | 834 | 784 | 666 | 686 | 698 | 367 | 166 | 76 | 24 | 21 | 85 | 49 | 40 | 22 | 40 | 19 | 11 | .. | .. | .. | 266 | 1352 |
| 4th quarter, October, November, December | 613 | 357 | 255 | 216 | 169 | 59 | 54 | 118 | 88 | 28 | 38 | 67 | 53 | 48 | 32 | 17 | 6 | 4 | .. | .. | .. | 227 | 385 |
| Total | 3392 | 1856 | 1536 | 1269 | 1257 | 913 | 560 | 545 | 293 | 102 | 113 | 298 | 186 | 141 | 88 | 80 | 45 | 27 | .. | 1 | .. | 866 | 2526 |

| DISEASES. | Almshouse. | People of Colour. | Country. | Nativity. | | | Wards. | | | | | | | | | | | | | | | | | | | | | | | | | Unknown Wards. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | United States. | Foreign. | Unknown. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| Cholera | 1 | .. | .. | 5 | 2 | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | 1 | 2 | .. | 1 | .. | .. | 1 | .. | .. |
| " infantum | 7 | 44 | 29 | 924 | 4 | 2 | 73 | 46 | 47 | 48 | 34 | 27 | 72 | 25 | 23 | 29 | 28 | 24 | 30 | 24 | 49 | 38 | 40 | 21 | 54 | 44 | 23 | 23 | 19 | 40 | 19 | 1 |
| " morbus | .. | .. | 2 | 16 | 12 | .. | .. | 3 | 1 | .. | 1 | .. | 3 | 3 | .. | 4 | 1 | .. | .. | 1 | 1 | .. | 1 | .. | 2 | 1 | .. | 1 | 3 | .. | .. | .. |
| Diarrhœa | 29 | 9 | 18 | 190 | 66 | 59 | 19 | 30 | 6 | 12 | 4 | 5 | 14 | 6 | 10 | 16 | 5 | 3 | 3 | 7 | 16 | 3 | 11 | 8 | 20 | 15 | 9 | 16 | 11 | 46 | 1 | 1 |
| Diphtheria | 1 | 10 | 18 | 417 | 9 | 8 | 30 | 21 | 15 | 8 | 14 | 8 | 27 | 21 | 8 | 14 | 9 | 11 | 9 | 16 | 42 | 10 | 12 | 11 | 15 | 35 | 17 | 16 | 17 | 31 | 2 | 1 |
| Dysentery | 7 | 5 | 9 | 122 | 42 | 12 | 24 | 11 | 2 | 9 | 8 | .. | 7 | 5 | 9 | 5 | 3 | 2 | 4 | 8 | 10 | 6 | .. | 6 | 5 | 9 | 2 | 2 | 6 | 20 | 3 | 1 |
| Erysipelas | 3 | 2 | 4 | 54 | 15 | 5 | 4 | 1 | 1 | 2 | 4 | 4 | 3 | 3 | 4 | 2 | 1 | 1 | 1 | 1 | 3 | 4 | 3 | 1 | 4 | 5 | 2 | 1 | 7 | 6 | 2 | .. |
| Fever | .. | .. | 1 | 12 | 5 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | 13 | .. | .. | .. | .. | .. |
| " congestive | .. | 3 | 4 | 34 | 8 | 1 | 4 | .. | 1 | 1 | .. | .. | 1 | .. | .. | 1 | 1 | 1 | 1 | .. | 2 | .. | 2 | 3 | 4 | 3 | 4 | 2 | .. | 2 | 6 | .. |
| " continued | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " eruptive | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " intermittent | .. | .. | 1 | 5 | 2 | .. | 1 | 2 | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| " malignant | .. | .. | .. | 12 | .. | .. | .. | .. | .. | .. | .. | 2 | 2 | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | 1 | .. | .. | 4 | .. | .. | .. | .. | .. |
| " petechial | .. | .. | .. | 4 | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " remittent, bilious | .. | 1 | 3 | 18 | 7 | 3 | 5 | .. | .. | 2 | .. | 1 | .. | 2 | 2 | 2 | .. | 2 | 1 | 1 | 2 | .. | .. | 1 | 2 | .. | .. | 1 | 1 | .. | .. | .. |
| " scarlet | 1 | 3 | 11 | 268 | 2 | 5 | 24 | 8 | 10 | 15 | 6 | 6 | 16 | 6 | 3 | 13 | 4 | 5 | 6 | 7 | 35 | 7 | 9 | 3 | 27 | 21 | 8 | 6 | 3 | 11 | 6 | .. |
| " spotted | .. | .. | 1 | 47 | 1 | 1 | 1 | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 8 | 6 | 5 | 4 | 1 | 15 | 1 | .. | 3 | .. | .. |
| " typhoid, low | 7 | 21 | 74 | 346 | 103 | 38 | 25 | 22 | 14 | 16 | 8 | 10 | 20 | 10 | 7 | 16 | 8 | 11 | 15 | 17 | 22 | 10 | 19 | 18 | 40 | 17 | 12 | 16 | 8 | 35 | 15 | 2 |
| " typhus | 2 | .. | 6 | 98 | 30 | 3 | 4 | .. | 1 | 3 | .. | 1 | 4 | 3 | 4 | 2 | 2 | 1 | 2 | 2 | 8 | 2 | 2 | 8 | 8 | 3 | 49 | 4 | 5 | 5 | 2 | .. |
| " yellow | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. |
| Hooping cough | .. | 4 | 2 | 76 | 1 | 1 | 6 | 2 | 2 | 2 | 3 | 2 | 3 | 1 | 2 | 2 | 3 | .. | .. | 5 | 4 | 3 | 6 | 5 | 5 | 1 | 1 | 4 | 3 | 10 | 1 | .. |
| Measles | 1 | 2 | 3 | 78 | 3 | 1 | 2 | 4 | 2 | 7 | 2 | 1 | 4 | 4 | .. | 1 | 3 | 2 | 1 | 4 | 13 | 2 | 5 | 2 | 13 | 1 | .. | 3 | .. | 2 | 1 | .. |
| Smallpox | .. | 2 | 1 | 131 | 14 | 26 | 6 | 11 | 3 | 2 | .. | .. | 4 | 1 | 4 | 7 | 3 | 6 | 1 | 1 | 24 | 7 | 8 | 3 | 24 | 12 | 26 | 1 | 1 | 1 | 12 | 2 |
| Syphilis | 15 | 6 | 1 | 22 | .. | 6 | 1 | .. | 1 | 1 | 1 | 2 | 1 | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | 15 | .. | 1 |
| Thrush or aphthæ | .. | .. | 1 | 6 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Total | 84 | 112 | 189 | 2891 | 329 | 172 | 231 | 164 | 107 | 130 | 88 | 71 | 181 | 90 | 76 | 110 | 72 | 70 | 76 | 97 | 235 | 102 | 127 | 99 | 232 | 169 | 187 | 98 | 83 | 228 | 71 | 9 |

## *Deaths from Zymotic Diseases in each Quarter of the Year* 1863.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1st quarter, January, February, March | 13 | 11 | 48 | 438 | 74 | 54 | 19 | 29 | 11 | 15 | 9 | 12 | 33 | 13 | 17 | 20 | 9 | 18 | 16 | 14 | 30 | 12 | 18 | 18 | 47 | 38 | 27 | 17 | 16 | 42 | 15 | 3 |
| 2d quarter, April, May, June | 15 | 14 | 30 | 513 | 61 | 22 | 37 | 22 | 20 | 28 | 11 | 14 | 28 | 14 | 8 | 16 | 20 | 13 | 5 | 17 | 62 | 23 | 24 | 15 | 34 | 28 | 39 | 13 | 13 | 40 | 20 | 2 |
| 3d quarter, July, August, September | 29 | 69 | 67 | 1472 | 90 | 56 | 139 | 93 | 59 | 69 | 52 | 35 | 99 | 44 | 37 | 63 | 36 | 29 | 44 | 47 | 104 | 54 | 59 | 39 | 104 | 84 | 44 | 49 | 40 | 100 | 25 | 3 |
| 4th quarter, October, November, December | 27 | 18 | 44 | 468 | 104 | 40 | 36 | 20 | 17 | 18 | 16 | 10 | 21 | 19 | 14 | 11 | 7 | 10 | 11 | 19 | 39 | 13 | 26 | 27 | 47 | 19 | 77 | 19 | 14 | 46 | 11 | 1 |
| Total | 84 | 112 | 189 | 2891 | 329 | 172 | 231 | 164 | 107 | 130 | 88 | 71 | 181 | 90 | 76 | 110 | 72 | 70 | 76 | 97 | 235 | 102 | 127 | 99 | 232 | 169 | 187 | 98 | 83 | 228 | 71 | 9 |

The figures in this table show that the deaths from zymotic diseases are to the total of deaths for the year as 20 per ct., or one in every five.

A marked disproportion will be noticed in the deaths of the sexes. The males are 1856, while the females are only 1536; a difference of 320, or an increase of 20 per ct. in favour of males. This may be accounted for by the large number of deaths among soldiers who have been brought home sick, or for interment.

The deaths in the four quarters are presented in the annexed table with the above.

The third quarter of the year, July, August, and September, embraces 1618 deaths, while the three remaining quarters amount only to 1774. This difference is owing to the mortality from certain diseases peculiar to the summer months, as cholera infantum, dysentery and diarrhœa.

The mortality among children under five years of age, from the diseases in the class zymotic, has been almost incredible, amounting to 63 per ct., and if we include those between five and ten years, it will swell the number to 70 per ct.

The highest number of deaths from any one disease in this catalogue, was 930, cholera infantum. This destructive disease of infants shows an increase of 301 deaths over those of 1862, or 48 per ct., and was confined principally to the three summer months, July, August, and September.

This infantile disease is peculiar to large cities, and is most prevalent and fatal in those localities where exists the greatest amount of filth, squalor, over-crowding, defective ventilation, with other unwholesome influences.

A glance at the figures on the line opposite cholera infantum, under the different wards, will strikingly exemplify this remark.

The first seven wards contributed 343 deaths, and those included from the 15th to the 20th wards gave 246, in all, 589, or 65 per ct., while the remainder 341 were scattered through the remaining twelve wards, including those from the Almshouse.

These thirteen wards are, with scarcely an exception, the most unsanitary of all others. They contain a larger and more densely crowded population. They have a greater number of small streets, and abound in courts and alleys. A stroll for an hour on a warm summer afternoon through several of these neighbourhoods, reeking with filth and mud, sending forth an indescribable odour, and then following up the visit by entering a few of the cellars and yards of the pent up hovels, where there exist a systematic neglect of cleanliness, and an atmosphere of decomposition, and we are persuaded the visitor will return home fully convinced that we have "neither extenuated or set down aught in malice," concerning these districts of our city.

*Diphtheria.*—The deaths from this disease amounted to 434 against 325, during the previous year, an increase of 33 per ct. This disease appears to have been steadily on the increase, while its prevalence has not been confined to any special locality. In point of fact, those wards called rural and those classed as healthy, and enjoying the advantages of house accommodation, free circulation of air, and their residents accustomed to the comforts of an improved social condition, all of which are essential to health, have suffered in some instances beyond those where the standard of social refinement is very limited, where there is over-crowding, neglect of cleanliness, squalid wretchedness, ill-ventilated dwellings, and an atmosphere at all times loaded

with unwholesome and deadly gases. For instance, the 4th ward gave only 8 deaths, while the 8th ward furnished 21 deaths. The 14th ward gave 16, while the 17th gave only 12. The 21st and 22d wards contributed 33 deaths, while the 2d and 3d gave 36, only a fraction more. These statistics conform to the opinion elsewhere expressed and cited in a former report, that diphtheria obeys no climatic laws, and is independent of all atmospheric conditions. We are quite certain that neither the heat of summer nor the cold of winter has exerted any influence in abating its destructive attacks.

*Typhoid fever* caused 487 deaths. Of this number 74 were brought from beyond the city for interment, and if we deduct the 123 deaths that are charged to the U. S. soldiers, it will then give us only 364 deaths as properly belonging to our city mortality. These figures, therefore, mark a slight decline from those of 1862, making a similar deduction of the deaths of soldiers for that year.

*Diarrhœa.*—Three hundred and fifteen deaths were caused by diarrhœa. Of this number, 100 are charged to the soldiers. By deducting these, as many of them died abroad and were brought here for interment, while others contracted their disease in camps, and were ordered to the U. S. hospitals located here, they do not properly belong to our city mortality, and should be deducted. By this arrangement, we reduce the deaths from diarrhœa to 215, a fraction less than those for the previous year.

*Hooping-cough* fell off 62 per ct., that is, from 208 in 1862, to 78 in '63.

*Measles* 24 per ct.

*Smallpox* 35 per ct., or from 264 to 171. Here again we desire to direct attention to the great number of deaths among children from smallpox compared with those in adults, as a proof of the defective character of the existing ordinance for public vaccination, and the necessity for a compulsory law in order to secure our city and even our State from the frequent ravages of this loathsome disease.

The month of February in this year was ushered in by the appearance of an unusual disease, of an eruptive form; its type asthenic; in many cases defying all treatment; running its course rapidly to a fatal termination, within from a few hours to two and five days, and if we can form any correct idea from the deaths reported, confining itself to certain localities in a densely populated district of the city, and to several built up portions of the rural wards.

In the absence of all correct diagnosis and the want of a proper nomenclature, it is somewhat difficult to secure the true number of deaths from this strange disease. We are very sure that the generic term "spotted," as given in the record, does not designate all of them. A variety of terms have been assumed, in the certificates of death, according to the views entertained of its diagnostic relations, and the observations and experience of those several practitioners who have been somewhat familiar with its advent and stay among us.

By some, it has been called *spotted*, and by others *malignant*, *petechial*, *congestive*, and *typhus* fevers. One practitioner certified to all his cases of death, under the very general term *fever*, for the want of a more distinct name. Nor is it less certain that many of the fatal cases were treated as

*congestion*, as well as inflammation of the meninges of the brain, and recorded *cerebro-spinal meningitis.*

Of the correctness of a single observation, however, as already intimated, and drawn from a careful analysis of the death register, and from reliable information otherwise secured, we are certain, viz., that this unusual visitor, whatever be its etiology, pathology, or distinguishing title, has confined its ravages chiefly to the northeastern section of the city, embracing the 16th, 17th, 18th, and 19th wards, having a front either directly or indirectly through the Cohocksink Creek, on the Delaware River. The built up portion of the 23d ward, bounded on the south, east, and west, by the Frankford Creek; together with that densely inhabited section of the 21st ward, on its western slope, lying along the margin of the Schuylkill River.

Out of the 256 deaths recorded from those fevers above named, 155, or 61 per ct., are credited to the localities we have designated as having suffered peculiarly from this uncommon and alarming disease. We think, therefore, there is legitimate ground for venturing the opinion that not less than 150 deaths have occurred during the year from "spotted fever," or *cerebro-spinal meningitis.*

Almost simultaneous with the advent of spotted fever in our city, an epidemic catarrh or influenza made its appearance and spread itself very generally throughout the community. This disease was not confined to any particular period of life, nor to any special locality. In its duration in those cases that were uncomplicated and occurring in healthy subjects, it seldom was prolonged over a week, was far more severe on the nervous system than the ordinary catarrhal affections, but by no means fatal in character.

In children especially, this disease was accompanied with an eruption in many cases that resembled measles, and in those instances in which the catarrhal fever was predominant, this eruption was not readily distinguished from that exanthem. This efflorescence would last for a day or two, and gradually fade. In several families attended by the writer, no other symptom invited attention either from the parent or physician. Urticaria also, or at least an eruption perfect in its resemblance, was occasionally witnessed as a concomitant of this epidemic.

For a very full and interesting account of this disease, we would refer the College to a paper by Dr. Levick, one of its fellows, in the Jan. No. of the *Am. Journ. of Med. Sciences.*

How far there is a parallelism between this epidemic and the malignant form of fevers which has prevailed, further investigations may determine. Surely, the testimony brought forward by Dr. Levick, describing the complications of former epidemic influenzas as they have occurred at home and abroad, goes far towards establishing a close analogy between the two diseases which have been prominently associated, and travelling side by side in our city during the year.

In the reports for 1861 and '62 to the College, there are tables in which are recorded the deaths in the different wards of the city from zymotic or epidemic diseases. Below, will be found a continuation of these tables, in which will be seen the wards where the deaths have been most prevalent for three consecutive years.

| WARDS. | Population last census. | Deaths from Zymotic Diseases. | | | Total for three years. |
|---|---|---|---|---|---|
| | | 1861. | 1862. | 1863. | |
| First . . . . | 30,886 | 247 | 238 | 231 | 716 |
| Second . . . | 29,123 | 237 | 216 | 164 | 617 |
| Third . . . . | 19,929 | 99 | 112 | 107 | 218 |
| Fourth . . . | 23,461 | 171 | 125 | 130 | 426 |
| Fifth . . . . | 24,792 | 120 | 92 | 88 | 300 |
| Sixth . . . . | 14,882 | 58 | 68 | 71 | 197 |
| Seventh . . . | 31,267 | 184 | 219 | 181 | 584 |
| Eighth . . . | 27,770 | 71 | 93 | 90 | 254 |
| Ninth . . . . | 17,196 | 66 | 61 | 76 | 203 |
| Tenth . . . . | 21,849 | 101 | 132 | 110 | 243 |
| Eleventh . . . | 16,681 | 151 | 86 | 72 | 309 |
| Twelfth . . . | 16,681 | 125 | 107 | 70 | 302 |
| Thirteenth . . | 20,045 | 109 | 81 | 76 | 266 |
| Fourteenth . . | 24,258 | 110 | 100 | 97 | 307 |
| Fifteenth . . . | 32,091 | 203 | 181 | 235 | 619 |
| Sixteenth . . . | 20,067 | 183 | 122 | 102 | 407 |
| Seventeenth . . | 23,264 | 337 | 141 | 127 | 605 |
| Eighteenth . . | 20,441 | 233 | 125 | 99 | 457 |
| Nineteenth . . | 38,828 | 347 | 271 | 232 | 850 |
| Twentieth . . | 29,963 | 270 | 192 | 169 | 631 |
| Twenty-first . . | 17,159 | 108 | 72 | 187 | 367 |
| Twenty-second . | 17,173 | 58 | 71 | 98 | 227 |
| Twenty-third . | 23,985 | 114 | 85 | 83 | 282 |
| Twenty-fourth . | 23,738 | 114 | 40 | 228 | 382 |
| Twenty-fifth . . | ..... | ... | 221 | 71 | 292 |
| Unknown . . . | ..... | ... | 25 | 9 | 34 |
| Almshouse . . | ..... | ... | ... | ... | ... |
| From the country | ..... | ... | ... | ... | ... |
| Total population | 565,529 | ..... | ..... | ..... | ..... |
| Total deaths in each year | | 4,064 | 4,506 | ..... | 3,392 |
| Total for three years' epidemics | | | | 10,960 | |

According to the above figures, there has been an annual decline of deaths from those diseases usually called preventable. For instance, the deaths in 1863 were 16.50 per ct. less than in 1861. This gives a favourable indication as to the sanitary condition of the city.

The 1st, 2d, 4th, 7th, 15th, 17th, 19th and 20th wards, show a very heavy mortality from epidemic diseases. During the three years they have each been charged with over five hundred deaths, and the 19th, which has a population of about 38,828, contributed 850 deaths, or 1 in every 45. The 17th, with a population of 23,264, gave 1 death in every 38. The 1st, with a population of 30,886, gave 1 in 43.

These eight wards seem to maintain their reputation as the most unhealthy in the city.

Mortality in Wards.—The wards that have furnished the greatest number of deaths according to their population are the following in the numerical order which we have placed them, viz., the 1st, 24th, 15th, 4th, 2d, 7th, 3d, 20th, 19th, 21st, and 17th.

The 23d, 8th, 12th, and 13th wards gave the smallest number of deaths according to their population.

In all the wards of the city the populations have increased. Some allowance therefore must be made for the above calculations.

Deaths from Sporadic Causes.—In the general table of interments in this city for the year 1863, accompanying this report, it will be seen that the deaths from all causes, except those from zymotic diseases which we have already enumerated, numbering 3,392, have amounted to 10,828. Of these deaths,

Consumption of the Lungs contributed the largest number, amounting to 1,955, nearly 14 per cent. of the total of deaths, and the highest mortality from this disease ever recorded for Philadelphia, being an increase of six over those for 1862.

The number of deaths in each month were as follows :—

| | | | |
|---|---|---|---|
| January | 164 | July | 171 |
| February | 164 | August | 155 |
| March | 160 | September | 156 |
| April | 209 | October | 150 |
| May | 146 | November | 162 |
| June | 121 | December | 197 |

The highest number in any one month was 209, in April. The lowest in June, 121.

The deaths among males exceeded those of females by 23. The two decennial periods between 20 and 40 contributed 974 deaths, equal to 50 per cent.

The deaths among people of colour amounted to 161, or 8 per cent. The mortality from this disease is on the increase with the coloured population.

Thirty-five per cent. of the deaths recorded are charged to our foreign population, fifty-seven per cent. to those of American birth, seven per cent. not designated.

The average monthly mortality was 163, and for every day there were 5 deaths.

Still-Born.—From this cause assigned for death there are 743 returns. This is equal to about five per cent. of all the deaths. An improvement in this classification is much needed. How many of the "still-borns" were the result of design, malpractice, ignorance, neglect, carelessness, or scientific destruction of life at the time of, or during the process of labour, is a question of importance for solution. Were all the causes we have suggested for the deaths of new-born infants, to be assigned, when they are rightfully entitled to the credit of the death, the name "still-born" would hardly find a place in the catalogue. In a sanitary estimate they should always be deducted.

Inflammation of the Lungs.—Deaths from this disease occurred in 743 instances. This is a winter disease, and while it is not confined to children, but may attack at all ages, nevertheless 276 of the deaths, equal to thirty-seven per cent., are placed to the account of children under five years of age. Many of these deaths in young children are not only the result of neglected bronchial catarrhs, but complications with measles, hooping-cough, and scarlatina. Strictly classified, they should be assigned to these several headings.

Debility.—Under this very common title there are set down 926 deaths. Of these, 356 were under one year of age. It is very doubtful whether the deaths beyond the first year of life belong properly to debility alone. By a more careful diagnosis their true cause, a consequence of disease, would have been detected, and another name given to the remaining 570 deaths.

Marasmus gives 606 deaths. Of this number, 551 were among minors,

and of these, 365 were under one year of age. This record is less than that for 1862, by 37 deaths.

Croup, a disease peculiar to childhood, furnishes 444 deaths. Of these 335 took place between the first and fifth year, and this is the period when children are most susceptible to an attack.

The excess of male deaths in the record, 47 over those in the female, equal to 23½ per cent., goes to confirm the opinion so frequently referred to, that boys are more subject to croup than girls. This is no doubt the case, and is owing to their more frequent exposure to sudden transitions of temperature.

Convulsions.—Another somewhat obscure name, to which have been ascribed 681 deaths. Of these, 628 are charged to children, many of which cases of convulsions were, in all probability, the mere forerunners of death from attacks of disease under which the children had been labouring, and to which cause the death should have been ascribed.

Congestion of the Brain gives 421 deaths; Disease of the Heart, 305; Disease of the Stomach and Bowels, 267; Apoplexy, 194; Dropsy, 225; Old Age, 234; and Gunshot Wounds, 310. Of these wounds 308 were in soldiers, and having been received in the field, should not by right be calculated in our mortality.

In closing this report we would call the attention of the College to the following remarks contained in the report of the registration department of the Board of Health of our city, with reference to the use of a more correct and plainer terminology for diseases by physicians, when making their returns of deaths to that office. If the hints contained therein do not apply to the fellows of the College, they may be suggestive to others into whose hands this report will fall.

"In the foregoing table, presenting the total mortality of the year, much looseness of language has occurred in the naming of the various diseases, by those whose duty it is to make returns of deaths. Nor is it alone in the carelessness or tautology of names applied that we would complain, but of the obscure or ambiguous, and in numerous instances obsolete terms that are used to express some of those diseases that terminate in death almost every week, and are known by familiar titles to the reader of the mortality returns." * * * * * *

"If the profession would confine itself to a nomenclature of plain English terms, or even adopt, for general use, the classification of diseases and the nomenclature as approved by the National Medical Convention in 1847, when it met in this city, much trouble and time would be spared this department, and we should not be compelled to disfigure our public record with such terms as 'Spanemia,' 'Helminthiasis,' 'Vulnus Sclopetarium,' 'Born too soon,' 'Nably Information,' 'Black Small Pox,' 'Pulmonary decline,' 'Miscarriage,' a child; 'Still-born,' a child two years old; 'Chlorosis,' a boy six years old; 'Pains,' 'Frosted Feet,' and many others equally obsolete and ridiculous, which certainly cannot elevate the standard qualifications of the medical profession in our city.

"It is earnestly to be desired, therefore, that measures may be taken either by the Board of Health or the physicians of Philadelphia, to correct an evil which is increasing every year, and to secure for the future a more uniform and less complicated nomenclature, for all practical purposes, than the one now employed by those making returns of deaths to this office."

Interments in the City for the Year 1863.

| DISEASES. | Total. | SEX. Males. | Females. | Boys. | Girls. | AGES. Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | Adults. | Minors. | Alms House. | People of Colour. | Country. | NATIVITY. U. States. | Foreign. | Unknown. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Abscess | 68 | 40 | 28 | 10 | 9 | 5 | 3 | 4 | 2 | 3 | 2 | 14 | 9 | 8 | 5 | 8 | 4 | 1 | .. | .. | .. | 49 | 19 | 5 | 2 | 5 | 48 | 12 | 8 |
| Apoplexy | 194 | 109 | 85 | 1 | 3 | 2 | .. | 2 | .. | .. | .. | 9 | 29 | 24 | 40 | 48 | 27 | 12 | 1 | .. | .. | 190 | 4 | 8 | 7 | 12 | 97 | 78 | 19 |
| Aneurism | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 2 | .. | .. |
| " aorta | 7 | 4 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 3 | 2 | 1 | .. | .. | .. | .. | .. | 7 | .. | 1 | 1 | .. | 3 | 1 | 3 |
| " brain | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | . | .. | 1 | .. | .. | .. | 1 | .. | .. |
| Abortion | 3 | 1 | 2 | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | .. | .. | 2 | 1 | .. |
| Anæmia | 13 | 7 | 6 | 6 | 2 | 6 | .. | 1 | 1 | .. | .. | 1 | 1 | 1 | .. | 2 | .. | .. | .. | .. | .. | 5 | 8 | 1 | 1 | .. | 12 | 1 | .. |
| Amputation | 3 | 3 | .. | 2 | .. | .. | .. | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | .. | .. | 2 | 3 | .. | .. |
| Asphyxia | 37 | 24 | 13 | 22 | 10 | 32 | .. | .. | .. | .. | .. | 1 | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | 5 | 32 | 2 | 1 | .. | 33 | 2 | 2 |
| Aphthæ | 6 | 4 | 2 | 3 | 2 | 4 | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 5 | .. | .. | 1 | 6 | .. | .. |
| Asthma | 29 | 10 | 19 | 3 | 1 | 1 | 3 | .. | .. | .. | .. | 3 | 3 | 5 | 2 | 8 | 4 | .. | .. | .. | .. | 25 | 4 | 2 | 5 | .. | 19 | 8 | 2 |
| Albuminuria | 10 | 4 | 6 | 2 | 1 | .. | .. | 1 | 2 | .. | .. | 2 | 2 | .. | .. | 3 | .. | .. | .. | .. | .. | 7 | 3 | 1 | .. | .. | 4 | 5 | 1 |
| Angina pectoris | 8 | 6 | 2 | 2 | .. | .. | .. | 1 | .. | 1 | .. | 2 | .. | .. | 1 | 1 | 2 | .. | .. | .. | .. | 6 | 2 | .. | 1 | 2 | 6 | 2 | .. |
| Amenorrhœa | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| Anorexia | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Burns and scalds | 85 | 39 | 46 | 30 | 35 | 5 | 13 | 31 | 11 | 3 | 2 | 6 | 6 | 4 | 1 | 2 | .. | 1 | .. | .. | .. | 20 | 65 | .. | 4 | 2 | 67 | 15 | 3 |
| Biliary calculi | 4 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Boil | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| Cancer | 71 | 22 | 52 | 1 | .. | .. | 1 | .. | .. | .. | .. | 5 | 11 | 19 | 16 | 14 | 5 | 3 | .. | .. | .. | 73 | 1 | 2 | 2 | 3 | 33 | 37 | 4 |
| " breast | 11 | .. | 11 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | 6 | .. | 1 | 1 | .. | .. | .. | 11 | .. | .. | 1 | 1 | 6 | 5 | .. |
| " bladder | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | 2 | .. | .. | .. | .. | .. | 2 | .. |
| " bowels | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " face | 3 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | .. | .. | .. | 3 | .. | .. | 1 | .. | 2 | 1 | .. |
| " liver | 8 | 5 | 3 | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | 1 | 2 | 2 | 1 | .. | .. | .. | .. | .. | 7 | 1 | .. | .. | .. | 4 | 4 | .. |
| " lungs | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " mouth | 1 | .. | 1 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " pylorus | 3 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | .. | .. | 1 | 1 |
| " rectum | 2 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .. | .. | .. | .. | 3 | .. | 1 | .. | .. | 1 | 1 | 1 |
| " " stomach | 41 | 16 | 25 | 2 | 2 | 1 | .. | 1 | 1 | 1 | .. | .. | 5 | 11 | 10 | 5 | 6 | .. | .. | .. | .. | 37 | 4 | .. | .. | 4 | 19 | 19 | 3 |
| " spleen | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | 2 | .. | 1 | 1 | .. | .. | .. | 2 |
| " throat | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| " uterus | 40 | .. | 40 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 9 | 10 | 14 | 5 | 2 | .. | .. | .. | .. | 40 | .. | .. | 2 | 1 | 22 | 18 | .. |
| Casualties | 120 | 99 | 21 | 32 | 10 | 2 | 1 | 9 | 16 | 8 | 6 | 18 | 26 | 12 | 7 | 11 | 2 | 2 | .. | .. | .. | 78 | 42 | .. | .. | 18 | 70 | 47 | 3 |
| Croup | 444 | 245 | 198 | 245 | 198 | 49 | 117 | 218 | 50 | 8 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 443 | 1 | 3 | 8 | 436 | 5 | 2 |
| Congestion | 6 | 2 | 4 | 1 | 4 | 2 | .. | 2 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 5 | .. | .. | .. | 6 | .. | .. |
| " brain | 421 | 241 | 180 | 156 | 132 | 86 | 57 | 60 | 45 | 23 | 17 | 41 | 29 | 24 | 11 | 16 | 9 | 2 | 1 | .. | .. | 133 | 288 | 1 | 8 | 14 | 340 | 73 | 8 |
| " bowels | 3 | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .. | 2 | 1 | .. |
| " chest | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| " heart | 4 | 2 | 2 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | .. | .. | .. | .. | .. | 3 | 1 | .. | .. | .. | 2 | 2 | .. |

*Interments in the City for the Year* 1863.—Continued.

| DISEASES. | Total. | SEX. | | | | AGES. | | | | | | | | | | | | | | | | | | | | NATIVITY. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | Adults. | Minors. | Alms House. | People of Colour. | Country. | U. States. | Foreign. | Unknown. |
| Congestion, liver | 15 | 9 | 6 | 6 | 2 | 6 | 1 | 1 | .. | .. | .. | 1 | 2 | 2 | 2 | .. | .. | .. | .. | .. | 7 | 8 | .. | .. | 1 | 14 | 1 | .. |
| " lungs | 183 | 99 | 84 | 45 | 50 | 51 | 13 | 17 | 8 | 2 | 4 | 6 | 19 | 13 | 19 | 12 | 17 | 1 | 1 | .. | .. | 88 | 95 | 3 | 8 | 9 | 142 | 34 | 7 |
| Convulsions | 681 | 360 | 321 | 334 | 294 | 398 | 106 | 93 | 25 | 2 | 4 | 12 | 17 | 8 | 11 | .. | 4 | 1 | .. | .. | .. | 53 | 628 | 2 | 36 | 16 | 653 | 22 | 6 |
| " puerperal | 11 | .. | 11 | .. | 1 | .. | .. | .. | .. | .. | 1 | 4 | 4 | 2 | .. | .. | .. | .. | .. | .. | .. | 10 | 1 | .. | .. | 1 | 5 | 5 | 1 |
| Consumption of bowels | 34 | 18 | 16 | 4 | 6 | 3 | 4 | 2 | 1 | .. | .. | 6 | 3 | 7 | 4 | 4 | .. | .. | .. | .. | .. | 24 | 10 | .. | 1 | 1 | 26 | 8 | .. |
| " lungs | 1955 | 966 | 989 | 109 | 132 | 24 | 21 | 25 | 20 | 23 | 128 | 585 | 489 | 307 | 172 | 108 | 47 | 6 | .. | .. | .. | 1714 | 241 | 110 | 161 | 63 | 1119 | 689 | 147 |
| " throat | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| Colic | 8 | 6 | 2 | 4 | 1 | 5 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | 3 | 5 | .. | .. | .. | 7 | 1 | .. |
| Cachexia | 4 | 1 | 3 | 1 | 3 | 3 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. | 4 | .. | .. |
| Carbuncle | 8 | 3 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | 3 | .. | 2 | .. | .. | .. | .. | 8 | .. | 1 | .. | 2 | 4 | 3 | 1 |
| Cyanosis | 46 | 27 | 19 | 27 | 19 | 44 | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 46 | 2 | .. | .. | 43 | 2 | 1 |
| Contusion of spine | 1 | 1 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| Cirrhosis | 3 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .. | 1 | 2 | .. |
| " liver | 16 | 10 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 | 4 | 2 | 4 | 2 | .. | .. | .. | .. | 16 | .. | 2 | 1 | .. | 10 | 4 | 2 |
| Concussion | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 |
| " brain | 10 | 7 | 3 | 4 | 2 | .. | 1 | 2 | 3 | .. | .. | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | 4 | 6 | .. | .. | .. | 9 | 1 | .. |
| " liver | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Cramps | 24 | 11 | 13 | 11 | 11 | 18 | 3 | 1 | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 2 | 22 | .. | .. | .. | 22 | 2 | .. |
| Coup de soleil | 74 | 64 | 10 | 4 | .. | .. | .. | .. | 2 | .. | 2 | 5 | 24 | 26 | 10 | 5 | .. | .. | .. | .. | .. | 70 | 4 | 1 | .. | 3 | 8 | 54 | 12 |
| Cholera | 8 | 5 | 3 | 2 | .. | .. | 1 | .. | 1 | .. | .. | 1 | .. | 2 | 2 | 1 | .. | .. | .. | .. | .. | 6 | 2 | 1 | .. | .. | 5 | 2 | 1 |
| " infantum | 930 | 456 | 474 | 456 | 474 | 615 | 284 | 29 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 930 | 7 | 44 | 29 | 924 | 4 | 2 |
| " morbus | 28 | 18 | 10 | 7 | 3 | 5 | 1 | 1 | 1 | 2 | .. | 2 | 4 | 2 | 3 | 4 | 2 | 1 | .. | .. | .. | 18 | 10 | .. | .. | 2 | 16 | 12 | .. |
| Caries of vertebra | 3 | 1 | 2 | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | 1 | 1 | .. | 2 | .. | 1 |
| Compression of brain | 13 | 8 | 5 | .. | 2 | 1 | .. | .. | .. | .. | 1 | 5 | 1 | 1 | .. | 2 | 1 | .. | 1 | .. | .. | 11 | 2 | 1 | .. | .. | 3 | 5 | 5 |
| Congestive chills | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | 1 | .. | .. |
| Chlorosis | 3 | .. | 3 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .. | 2 | 1 | .. |
| Coma | 2 | 1 | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | 1 | 1 | .. |
| Constipation | 2 | 1 | 1 | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | 2 | .. | .. |
| Chicken-pox | 2 | 2 | .. | 2 | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 2 | .. | .. |
| Calculus | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " in bladder | 2 | 2 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | 2 | .. | .. |
| Childbirth | 8 | .. | 8 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 5 | 1 | .. | .. | .. | .. | .. | .. | .. | 8 | .. | .. | .. | .. | 2 | 6 | .. |
| Chorea | 2 | 2 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 3 | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | 1 | .. | 1 |
| Diphtheria | 434 | 218 | 216 | 208 | 210 | 38 | 78 | 191 | 86 | 19 | 6 | 6 | 2 | 3 | 3 | 1 | 1 | .. | .. | .. | .. | 16 | 418 | 1 | 10 | 18 | 417 | 9 | 8 |
| Dropsy | 225 | 99 | 126 | 21 | 18 | .. | 7 | 9 | 15 | 2 | 6 | 17 | 17 | 36 | 27 | 39 | 42 | 7 | 1 | .. | .. | 186 | 39 | 3 | 18 | 8 | 127 | 90 | 8 |
| " abdominal | 37 | 15 | 22 | 2 | 5 | .. | 1 | .. | 1 | 4 | 1 | .. | 9 | 8 | 6 | 3 | 3 | 1 | .. | .. | .. | 30 | 7 | 1 | .. | 2 | 16 | 13 | 3 |
| " brain | 225 | 133 | 92 | 130 | 92 | 84 | 75 | 48 | 14 | .. | 1 | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 3 | 222 | 5 | 7 | 8 | 223 | 1 | 1 |
| " chest | 57 | 31 | 26 | 9 | 4 | .. | 2 | 5 | 3 | 3 | .. | 2 | 8 | 7 | 6 | 11 | 7 | 3 | .. | .. | .. | 44 | 13 | 1 | 2 | 3 | 37 | 17 | 3 |
| " heart | 37 | 15 | 22 | 2 | 4 | 1 | .. | 1 | .. | 1 | 3 | 2 | 6 | 8 | 6 | 5 | 3 | 1 | .. | .. | .. | 31 | 6 | 1 | 4 | 4 | 21 | 10 | 6 |

*Interments in the City for the Year* 1863.—Continued.

| DISEASES. | Total. | SEX. | | | | AGES. | | | | | | | | | | | | | | | | Adults. | Minors. | Alms House. | People of Colour. | Country. | NATIVITY. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | | | | | | U. States. | Foreign. | Unknown. |
| Dropsy, glottis | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | .. | 1 | .. | 1 |
| " liver | 2 | 1 | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | 1 | 1 | .. | 1 | .. | 1 |
| " lungs | 2 | 1 | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | 1 | .. | 1 |
| " ovaries | 5 | .. | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 3 | .. | .. | .. | .. | .. | .. | 5 | .. | .. | .. | .. | 5 | .. | .. |
| Disease of aorta | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 2 | .. | 2 | .. | .. | .. | .. | 2 |
| " brain | 103 | 70 | 33 | 41 | 27 | 18 | 20 | 12 | 11 | 2 | 5 | 5 | 14 | 11 | 4 | 1 | .. | .. | .. | .. | .. | 35 | 68 | 1 | .. | 7 | 86 | 14 | 3 |
| " blood | 2 | 1 | 1 | 1 | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | 2 | .. | .. |
| " bladder | 6 | 5 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | 1 | 2 | 1 | .. | .. | .. | 6 | .. | .. | .. | 1 | 4 | 2 | .. |
| " chest | 2 | 2 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 1 | 1 | .. | 1 |
| " heart | 305 | 170 | 135 | 41 | 32 | 26 | .. | 7 | 11 | 10 | 19 | 34 | 35 | 41 | 45 | 33 | 31 | 11 | 2 | .. | .. | 232 | 73 | 12 | 13 | 18 | 194 | 91 | 20 |
| " hip | 1 | .. | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " kidneys | 15 | 9 | 6 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | 3 | 3 | 2 | 2 | 4 | .. | .. | .. | .. | 14 | 1 | 1 | 2 | 1 | 6 | 8 | 1 |
| " liver | 53 | 29 | 24 | 5 | 3 | 4 | 1 | .. | 1 | 2 | .. | 3 | 9 | 14 | 9 | 3 | 4 | 2 | 1 | .. | .. | 45 | 8 | 2 | 5 | 3 | 33 | 18 | 2 |
| " lungs | 26 | 17 | 9 | 4 | 3 | 3 | 2 | 1 | 1 | .. | .. | 4 | 5 | 5 | .. | 3 | 2 | .. | .. | .. | .. | 19 | 7 | .. | 1 | 1 | 14 | 11 | 1 |
| " prostate gland | 3 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .. | 2 | 1 | .. |
| " stomach and bowels | 24 | 11 | 13 | 4 | 2 | 3 | .. | 3 | .. | .. | .. | 2 | 4 | 3 | 1 | 2 | 6 | .. | .. | .. | .. | 18 | 6 | .. | .. | 2 | 17 | 6 | 1 |
| " skin | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " spine | 25 | 16 | 9 | 11 | 7 | 8 | 1 | 6 | 1 | .. | 2 | 1 | 4 | 1 | .. | 1 | .. | .. | .. | .. | .. | 7 | 18 | .. | 1 | 1 | 21 | 3 | 1 |
| " throat | 6 | 1 | 5 | 1 | 3 | .. | .. | 3 | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | 2 | 4 | .. | .. | .. | 5 | 1 | .. |
| " uterus | 4 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 2 | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. | .. | 1 | 3 | .. |
| " ovaries | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 2 | .. | .. |
| Diarrhœa | 315 | 207 | 108 | 63 | 65 | 65 | 35 | 11 | 3 | 2 | 12 | 54 | 40 | 34 | 17 | 21 | 10 | 11 | .. | .. | .. | 187 | 128 | 29 | 9 | 18 | 190 | 66 | 59 |
| Dysentery | 176 | 92 | 84 | 51 | 42 | 30 | 26 | 23 | 11 | 1 | 2 | 10 | 11 | 12 | 13 | 17 | 12 | 8 | .. | .. | .. | 83 | 93 | 7 | 5 | 9 | 122 | 42 | 12 |
| Debility | 926 | 490 | 436 | 225 | 203 | 356 | 29 | 24 | 9 | 4 | 6 | 37 | 59 | 75 | 64 | 100 | 97 | 46 | 15 | 4 | 1 | 498 | 428 | 53 | 77 | 13 | 589 | 251 | 86 |
| Drowned | 131 | 116 | 15 | 44 | 7 | 1 | 1 | 4 | 14 | 21 | 10 | 24 | 30 | 11 | 7 | 7 | 1 | .. | .. | .. | .. | 80 | 51 | .. | 6 | 15 | 62 | 24 | 45 |
| Debauch | 9 | 6 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 2 | 1 | 2 | 2 | .. | .. | .. | .. | .. | 9 | .. | 1 | 2 | .. | 2 | 2 | 5 |
| Diabetes | 10 | 7 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 3 | 2 | 1 | 1 | 1 | .. | .. | 10 | .. | .. | .. | .. | 8 | 2 | .. |
| Degeneration of heart | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 2 | .. | .. |
| " kidneys | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | 1 |
| Dyspepsia | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Eczema | 2 | 1 | 1 | 1 | 1 | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 2 | .. | .. |
| Elephantiasis | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 2 | .. | .. |
| Emphysema | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " of lungs | 4 | 1 | 1 | 2 | 1 | 1 | .. | 1 | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 3 | .. | .. | .. | 3 | 1 | .. |
| Epilepsy | 35 | 16 | 19 | 4 | 6 | 3 | .. | 3 | .. | 2 | 2 | 10 | 7 | 2 | 3 | 1 | 2 | .. | .. | .. | .. | 25 | 10 | 1 | 1 | 1 | 25 | 9 | 1 |
| Effusion on brain | 43 | 23 | 20 | 16 | 19 | 10 | 13 | 8 | 3 | 1 | .. | 1 | 2 | 1 | 2 | 1 | 1 | .. | .. | .. | .. | 8 | 35 | .. | .. | 1 | 40 | 3 | .. |
| " chest | 2 | 2 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | 1 | 1 | .. |
| " heart | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | 2 | .. |
| " lungs | 3 | 3 | .. | 2 | .. | .. | 1 | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | .. | .. | .. | 3 | .. | .. |

| DISEASES. | Total. | SEX. | | | | AGES. | | | | | | | | | | | | | | | | NATIVITY. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | Adults. | Minors. | Alms House. | People of Colour. | Country. | U. States. | Foreign. | Unknown. |
| Erysipelas | 74 | 39 | 35 | 17 | 22 | 28 | 1 | 4 | 1 | 4 | 1 | 4 | 7 | 10 | 3 | 4 | 4 | 3 | .. | .. | .. | 35 | 39 | 3 | 2 | 4 | 54 | 15 | 5 |
| Erythema | 1 | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| Exposure | 2 | 1 | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 1 | 1 | .. | 1 |
| Empyema | 6 | 3 | 3 | .. | 1 | .. | .. | 1 | .. | .. | .. | 4 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 5 | 1 | .. | .. | .. | 3 | 2 | 1 |
| Enemia | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Enlargement of heart | 4 | .. | 4 | .. | 1 | .. | .. | .. | 1 | .. | .. | 2 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 3 | 1 | .. | 1 | .. | 3 | 1 | .. |
| " liver | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 1 | 2 | .. | .. |
| Fever | 17 | 8 | 9 | 7 | 5 | 1 | .. | 2 | 5 | 3 | 1 | 4 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 5 | 12 | .. | .. | 1 | 12 | 5 | .. |
| " brain | 12 | 9 | 3 | 5 | 3 | 3 | .. | 3 | 1 | 1 | .. | 1 | .. | 1 | 2 | .. | .. | .. | .. | .. | .. | 4 | 8 | .. | .. | 4 | 11 | .. | 1 |
| " bilious | 8 | 4 | 4 | .. | 1 | .. | .. | 1 | .. | .. | .. | 1 | 1 | .. | .. | 4 | 1 | .. | .. | .. | .. | 7 | 1 | .. | .. | .. | 3 | 4 | 1 |
| " catarrh | 24 | 9 | 15 | 9 | 15 | 13 | 4 | 6 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 24 | .. | 3 | 1 | 23 | 1 | .. |
| " congestive | 43 | 20 | 23 | 12 | 13 | 1 | 3 | 6 | 7 | 1 | 7 | 7 | 2 | 2 | 2 | 2 | 3 | .. | .. | .. | .. | 18 | 25 | .. | 3 | 4 | 34 | 8 | 1 |
| " continued | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| " eruptive | 1 | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " gastric | 4 | 2 | 2 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | 3 | 1 | .. | 1 | .. | 2 | 2 | .. |
| " hectic | 1 | 1 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " inflammatory | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. |
| " intermittent | 7 | 3 | 4 | 1 | 2 | 1 | .. | 1 | .. | .. | 1 | 2 | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | 4 | 3 | .. | .. | 1 | 5 | 2 | .. |
| " low | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 |
| " malignant | 12 | 5 | 7 | 5 | 6 | 1 | .. | 4 | 1 | 3 | 2 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 11 | .. | .. | .. | 12 | .. | .. |
| " miasmatic | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " nervous | 6 | 4 | 2 | 1 | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | 1 | .. | 2 | .. | .. | .. | .. | .. | 5 | 1 | .. | .. | .. | 4 | 2 | .. |
| " puerperal | 29 | .. | 29 | .. | .. | .. | .. | .. | .. | .. | .. | 20 | 8 | 1 | .. | .. | .. | .. | .. | .. | .. | 29 | .. | 2 | 1 | 3 | 16 | 10 | 3 |
| " petechial | 4 | 1 | 3 | .. | 3 | .. | .. | 1 | 2 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 3 | .. | .. | .. | 4 | .. | .. |
| " pernicious | 1 | 1 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " rheumatic | 3 | 2 | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | .. | 1 | 1 | .. | 2 |
| " remittent | 18 | 9 | 9 | 5 | 3 | .. | .. | 4 | 1 | 1 | 2 | 2 | 2 | 3 | 2 | 1 | .. | .. | .. | .. | .. | 10 | 8 | .. | 1 | 3 | 13 | 3 | 2 |
| " spotted | 49 | 33 | 16 | 30 | 14 | 4 | 2 | 10 | 12 | 10 | 6 | 1 | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | 5 | 44 | .. | .. | 1 | 47 | 1 | 1 |
| " scarlet | 275 | 142 | 133 | 141 | 130 | 21 | 39 | 129 | 72 | 9 | 1 | 1 | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | 4 | 271 | 1 | 3 | 11 | 268 | 2 | 5 |
| " typhoid | 486 | 340 | 146 | 85 | 60 | 1 | 7 | 27 | 33 | 27 | 50 | 147 | 87 | 44 | 30 | 19 | 11 | 3 | .. | .. | .. | 341 | 145 | 7 | 21 | 74 | 346 | 103 | 37 |
| " typhus | 131 | 69 | 62 | 43 | 33 | 4 | 4 | 18 | 21 | 13 | 16 | 19 | 6 | 16 | 10 | 4 | .. | .. | .. | .. | .. | 55 | 76 | 2 | .. | 6 | 98 | 30 | 3 |
| " traumatic | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " yellow | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Fracture | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. |
| " arm | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " leg | 8 | 7 | 1 | 3 | .. | .. | .. | .. | 1 | 1 | 1 | 1 | .. | 1 | 1 | 1 | 1 | .. | .. | .. | .. | 5 | 3 | .. | 1 | .. | 4 | 4 | .. |
| " shoulder | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| " skull | 11 | 10 | 1 | 3 | 1 | .. | .. | .. | 1 | 1 | 2 | 3 | 1 | 2 | .. | 1 | .. | .. | .. | .. | .. | 7 | 4 | .. | .. | .. | 7 | 4 | .. |
| " spine | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 1 | 1 | .. |

*Interments in the City for the Year* 1863.—Continued.

| DISEASES. | Total. | SEX. | | | | AGES. | | | | | | | | | | | | | | | | | | | | | | | NATIVITY. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | Adults. | Minors. | Alms House. | People of Colour. | Country. | U. States. | Foreign. | Unknown. |
| Fracture of thigh | 4 | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 4 | .. | .. | .. | .. | 3 | .. | 1 |
| Fungus of testicle | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Fistula in ano | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 2 | .. | 1 | 1 | .. | 1 | .. | 1 |
| Fatty degeneration of heart | 3 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | .. | .. | .. | .. | .. | .. | 3 | .. | 1 | .. | .. | 2 | .. | 1 |
| " " kidneys | 3 | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | .. | .. | .. | .. | 3 | .. | 1 | .. | .. | 1 | 1 | 1 |
| " " liver | 4 | 1 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | 4 | .. | 1 | .. | .. | .. | 3 | 1 |
| Gangrene | 51 | 32 | 19 | 3 | 7 | 2 | 2 | 4 | .. | 2 | .. | 6 | 3 | 6 | 7 | 7 | 6 | 5 | .. | 1 | .. | 41 | 10 | 7 | .. | 3 | 27 | 12 | 12 |
| Gout | 5 | 4 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | 2 | .. | .. | .. | .. | .. | 5 | .. | .. | .. | .. | 3 | 2 | .. |
| Gravel | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 1 | 1 | .. |
| Gall stones | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | 1 |
| Hooping-cough | 78 | 24 | 54 | 24 | 54 | 32 | 20 | 22 | 3 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 73 | .. | 4 | 2 | 76 | 1 | 1 |
| Hemorrhage | 67 | 42 | 25 | 12 | 15 | 14 | 1 | 1 | 4 | 1 | 6 | 17 | 7 | 5 | 3 | 6 | 1 | 1 | .. | .. | .. | 40 | 27 | .. | 4 | 2 | 47 | 14 | 6 |
| " bowels | 6 | 4 | 2 | 1 | 1 | 2 | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | 4 | 2 | .. | .. | .. | 4 | 2 | .. |
| " lungs | 21 | 7 | 14 | .. | 2 | .. | .. | .. | .. | .. | 2 | 5 | 4 | 1 | 2 | 6 | 1 | .. | .. | .. | .. | 19 | 2 | .. | 3 | 3 | 14 | 7 | .. |
| " nose | 2 | .. | 2 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | 1 | 1 | .. |
| " uterus | 12 | .. | 12 | .. | 1 | .. | .. | .. | .. | 1 | 5 | 3 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | 11 | 1 | .. | .. | .. | 7 | 5 | .. |
| Hysteria | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| Hernia | 16 | 5 | 11 | 2 | 1 | 3 | .. | .. | .. | .. | .. | .. | .. | 6 | 1 | 3 | 2 | .. | 1 | .. | .. | 13 | 3 | .. | .. | .. | 7 | 9 | .. |
| Hydrophobia | 6 | 6 | .. | 3 | .. | .. | 1 | .. | 1 | .. | 1 | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | 3 | 3 | .. | .. | .. | 4 | 2 | .. |
| Hydræmia | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Helminthiasis | 1 | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. |
| Inflammation of aorta | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| " brain | 386 | 216 | 170 | 171 | 149 | 105 | 82 | 74 | 33 | 17 | 9 | 21 | 20 | 13 | 7 | 3 | 2 | .. | .. | .. | .. | 66 | 320 | 10 | 12 | 9 | 343 | 28 | 15 |
| " bronchi | 122 | 66 | 56 | 28 | 31 | 33 | 12 | 12 | 1 | .. | 1 | 7 | 12 | 11 | 6 | 12 | 10 | 4 | 1 | .. | .. | 63 | 59 | 8 | 9 | 2 | 81 | 34 | 7 |
| " bladder | 9 | 8 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | 2 | 3 | 1 | .. | .. | .. | .. | 9 | .. | 1 | .. | .. | 3 | 5 | 1 |
| " breast | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " chest | 5 | 3 | 2 | 2 | 2 | 1 | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 4 | .. | .. | .. | 4 | 1 | .. |
| " colon | 14 | 6 | 8 | 4 | 5 | 3 | 3 | 2 | .. | .. | .. | 1 | .. | .. | 2 | .. | 2 | 1 | .. | .. | .. | 6 | 8 | 1 | .. | .. | 12 | 2 | .. |
| " eye | 1 | .. | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " ear | 2 | 1 | 1 | 1 | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 2 | .. | .. |
| " heart | 27 | 10 | 17 | 5 | 6 | .. | 1 | 3 | 3 | 3 | 1 | 6 | 2 | 2 | 1 | 3 | 2 | .. | .. | .. | .. | 16 | 11 | 1 | 1 | .. | 22 | 4 | 1 |
| " kidneys | 13 | 3 | 10 | .. | 2 | 1 | .. | 1 | .. | .. | .. | .. | 2 | 1 | 2 | 4 | .. | 1 | 1 | .. | .. | 11 | 2 | 1 | .. | .. | 8 | 3 | 2 |
| " lungs | 743 | 404 | 339 | 224 | 204 | 196 | 103 | 77 | 27 | 12 | 23 | 46 | 54 | 42 | 53 | 50 | 42 | 16 | 2 | .. | .. | 305 | 483 | 11 | 57 | 30 | 583 | 138 | 22 |
| " liver | 53 | 30 | 23 | 5 | 3 | 4 | .. | 2 | .. | 1 | 1 | 4 | 9 | 9 | 12 | 8 | 3 | .. | .. | .. | .. | 45 | 8 | 1 | 3 | 2 | 24 | 28 | 1 |
| " larynx | 43 | 26 | 17 | 17 | 13 | 8 | 7 | 12 | 3 | .. | .. | 4 | 4 | 5 | .. | .. | .. | .. | .. | .. | .. | 13 | 30 | 2 | .. | 1 | 37 | 5 | 1 |
| " mouth | 1 | 1 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " ovaries | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. |
| " pleura | 17 | 11 | 6 | 1 | 1 | .. | 2 | .. | .. | .. | .. | 2 | 3 | 2 | 3 | 3 | 2 | .. | .. | .. | .. | 15 | 2 | .. | 1 | .. | 10 | 5 | 2 |
| " peritoneum | 93 | 33 | 60 | 5 | 11 | 5 | 1 | .. | 3 | 2 | 5 | 26 | 29 | 10 | 7 | 3 | 2 | .. | .. | .. | .. | 77 | 16 | 6 | 5 | 2 | 47 | 36 | 10 |

| DISEASES. | Total. | SEX. | | | | AGES. | | | | | | | | | | | | | | | | | ADULTS. | MINORS. | ALMS HOUSE. | PEOPLE OF COLOUR. | COUNTRY. | NATIVITY. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. | 110 to 120. | | | | | | U. States. | Foreign. | Unknown. |
| Inflammation of prostate gland | 3 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | .. | .. | 3 | .. | .. | .. | .. | 2 | 1 | .. |
| " stomach & bowels | 267 | 131 | 136 | 67 | 56 | 55 | 18 | 22 | 14 | 10 | 4 | 26 | 39 | 24 | 14 | 22 | 17 | 2 | .. | .. | .. | 144 | 123 | 2 | 18 | 15 | 183 | 72 | 12 |
| " spleen | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " spine | 4 | 3 | 1 | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 2 | .. | .. | .. | .. | .. | .. | 3 | 1 | .. | .. | .. | 2 | 2 | .. |
| " throat | 5 | 2 | 3 | 2 | 3 | .. | 1 | 2 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5 | .. | .. | .. | 5 | .. | .. |
| " tonsils | 5 | 3 | 2 | 2 | 2 | .. | .. | 2 | .. | 2 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 4 | .. | .. | .. | 5 | .. | .. |
| " testes | 1 | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " uterus | 5 | .. | 5 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 2 | .. | 1 | .. | .. | .. | .. | .. | .. | 5 | .. | .. | .. | .. | .. | 5 | .. |
| " veins | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. |
| Insanity | 30 | 13 | 17 | .. | .. | .. | .. | .. | .. | .. | .. | 7 | 8 | 9 | 3 | 2 | .. | 1 | .. | .. | .. | 39 | .. | 10 | .. | .. | 12 | 8 | 10 |
| Intemperance and exposure | 70 | 34 | 36 | .. | .. | .. | .. | .. | .. | .. | .. | 8 | 22 | 22 | 11 | 6 | 1 | .. | .. | .. | .. | 70 | .. | .. | 6 | .. | 7 | 16 | 47 |
| Infiltration of urine | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Inanition | 129 | 74 | 55 | 57 | 40 | 91 | 3 | 2 | 1 | .. | .. | 6 | 5 | 6 | 2 | 7 | 4 | 1 | 1 | .. | .. | 32 | 97 | 6 | 5 | 2 | 110 | 14 | 5 |
| Jaundice | 34 | 16 | 18 | 6 | 4 | 9 | 1 | .. | .. | .. | .. | 2 | 4 | 3 | 7 | 2 | 4 | 2 | .. | .. | .. | 24 | 10 | 1 | .. | 1 | 17 | 15 | 2 |
| Intussusception | 6 | 4 | 2 | 2 | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | 3 | 1 | .. | .. | .. | .. | .. | 4 | 2 | .. | .. | 1 | 4 | 2 | .. |
| Ischuria | 3 | 2 | 1 | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | 2 | 1 | .. | .. | .. | 1 | 2 | .. |
| Induration of liver | 2 | .. | 2 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | 1 | 1 | .. |
| " lymphatic ganglia | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| Ileus | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. |
| Laceration of uterus | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " lungs | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| Lupus | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| Leucocythemia | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| Marasmus | 606 | 301 | 305 | 274 | 277 | 365 | 124 | 44 | 13 | 2 | 3 | 7 | 7 | 7 | 7 | 9 | 12 | 6 | .. | .. | .. | 55 | 551 | 55 | 30 | 4 | 564 | 31 | 11 |
| Metritis | 11 | .. | 11 | .. | .. | .. | .. | .. | .. | .. | .. | 6 | 4 | .. | .. | 1 | .. | .. | .. | .. | .. | 11 | .. | .. | 2 | .. | 6 | 4 | 1 |
| Measles | 82 | 40 | 42 | 38 | 41 | 13 | 30 | 32 | 4 | .. | .. | 2 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 3 | 79 | 1 | 2 | 3 | 78 | 3 | 1 |
| Malformation | 34 | 18 | 16 | 18 | 16 | 32 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 34 | 1 | 2 | 1 | 33 | 1 | .. |
| Mania a potu | 76 | 70 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | 9 | 30 | 24 | 12 | 2 | .. | .. | .. | .. | .. | 77 | .. | 8 | .. | 4 | 19 | 41 | 17 |
| Mumps | 2 | 2 | .. | 2 | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 2 | .. | .. |
| Murder | 8 | 6 | 2 | 2 | .. | 1 | .. | .. | .. | .. | 1 | .. | 5 | 1 | .. | .. | .. | .. | .. | .. | .. | 6 | 2 | .. | 1 | 1 | 2 | 4 | 2 |
| Neuralgia | 4 | 2 | 2 | 2 | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 2 | 2 | .. | .. | 1 | 3 | 1 | .. |
| Neglect | 2 | 1 | 1 | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | 2 | .. | .. |
| Necrosis | 4 | 4 | .. | 3 | .. | .. | .. | 1 | 2 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 3 | .. | .. | .. | 2 | 2 | .. |
| Nervous irritation | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 1 | 1 | .. |
| Neurosis | 4 | 2 | 2 | 2 | 2 | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. | 4 | .. | .. |
| Old age | 234 | 87 | 147 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 10 | 59 | 123 | 37 | 5 | .. | 234 | .. | 7 | 11 | 3 | 125 | 98 | 11 |
| Obstruction of the bowels | 14 | 7 | 7 | 3 | 1 | 4 | .. | .. | .. | .. | .. | .. | .. | 5 | 2 | 2 | 1 | .. | .. | .. | .. | 10 | 4 | .. | .. | .. | 10 | 4 | .. |
| Ossification of the heart | 8 | 4 | 4 | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 2 | 1 | 4 | .. | .. | .. | .. | 7 | 1 | 1 | .. | .. | 3 | 4 | 1 |
| Palsy | 201 | 84 | 117 | 5 | 5 | 1 | 1 | 4 | 1 | .. | 3 | 8 | 13 | 11 | 34 | 51 | 55 | 17 | 2 | .. | .. | 191 | 10 | 9 | 10 | 6 | 115 | 73 | 13 |

*Interments in the City for the Year* 1863.—Continued.

| DISEASES. | Total. | SEX. | | | | AGES. | | | | | | | | | | | | | | | | | | | | NATIVITY. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2 | 2 to 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 30 | 30 to 40 | 40 to 50 | 50 to 60 | 60 to 70 | 70 to 80 | 80 to 90 | 90 to 100 | 100 to 110 | 110 to 120 | Adults. | Minors. | Alms House. | People of Colour. | Country. | U. States. | Foreign. | Unknown. |
| Pyæmia | 44 | 38 | 6 | 6 | 3 | .. | 1 | 2 | .. | .. | 6 | 25 | 6 | 3 | .. | .. | 1 | .. | .. | .. | .. | 35 | 9 | .. | .. | 6 | 22 | 10 | 12 |
| Parturition | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 1 | 1 | .. |
| Poisoning | 10 | 5 | 5 | 2 | 4 | 2 | .. | 3 | .. | 1 | .. | 2 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | 4 | 6 | 1 | 1 | 2 | 9 | .. | 1 |
| Purpura | 6 | 3 | 3 | 2 | 3 | 2 | 1 | .. | 2 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 5 | 1 | .. | .. | 5 | .. | 1 |
| Perforation of intestines | 3 | 2 | 1 | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | 2 | 1 | .. | .. | .. | 2 | 1 | .. |
| Pemphigus | 2 | .. | 2 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 2 | .. | .. |
| Pyrosis | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| Quinsy | 2 | 1 | 1 | 1 | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 2 | .. | .. |
| Run over on railroad | 55 | 48 | 7 | 13 | 1 | .. | 1 | 4 | 7 | 1 | 1 | 9 | 11 | 8 | 6 | 4 | 3 | .. | .. | .. | .. | 41 | 14 | .. | .. | 10 | 22 | 25 | 8 |
| Rheumatism | 35 | 19 | 16 | 7 | 6 | .. | 1 | 1 | 5 | 2 | 4 | 7 | 2 | 5 | 5 | 2 | 1 | .. | .. | .. | .. | 22 | 13 | .. | 2 | 5 | 26 | 7 | 2 |
| Rupia | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Rupture | 1 | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | 1 | .. | .. |
| " intestines | 1 | 1 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " liver | 3 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .. | 2 | 1 | .. |
| " urethra | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | 1 |
| " uterus | 5 | .. | 5 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | 5 | .. | .. | .. | .. | 1 | 4 | .. |
| Stricture of colon | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. |
| Suppuration of knee joint | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 |
| " bowels | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| " parotid gland | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Scrofula | 55 | 31 | 24 | 27 | 18 | 15 | 9 | 7 | 6 | 2 | 6 | 2 | 1 | 3 | 1 | 1 | 2 | .. | .. | .. | .. | 10 | 45 | 1 | 5 | .. | 50 | 4 | 1 |
| Softening of brain | 45 | 28 | 17 | 1 | 2 | 1 | 1 | .. | .. | .. | 1 | 2 | 4 | 8 | 4 | 12 | 9 | 3 | .. | .. | .. | 42 | 3 | 4 | 3 | 2 | 26 | 14 | 5 |
| " heart | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " stomach | 2 | 1 | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | 2 | .. | .. |
| Stillborn | 743 | 432 | 311 | 432 | 311 | 743 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 743 | .. | 52 | 11 | 743 | .. | .. |
| Smallpox | 171 | 95 | 76 | 56 | 65 | 33 | 24 | 28 | 25 | 6 | 5 | 29 | 13 | 7 | 1 | .. | .. | .. | .. | .. | .. | 50 | 121 | .. | 2 | 1 | 132 | 14 | 26 |
| Syphilis | 28 | 15 | 13 | 12 | 9 | 15 | 4 | 1 | .. | .. | 1 | 4 | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | 7 | 21 | 15 | 6 | 1 | 22 | .. | 6 |
| Sore throat | 6 | 3 | 3 | 3 | 3 | 1 | .. | 3 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 6 | .. | .. | 2 | 6 | .. | .. |
| Sore mouth | 2 | 1 | 1 | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | 1 | 2 | .. | .. |
| Suicide | 24 | 21 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | 7 | 6 | 4 | 4 | 2 | 1 | .. | .. | .. | .. | 24 | .. | .. | .. | .. | 8 | 7 | 9 |
| Suffocation | 6 | 4 | 2 | 4 | 1 | 4 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | 5 | .. | .. | 1 | 5 | 1 | .. |
| Strangulation of bowels | 2 | 1 | 1 | 1 | 1 | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 2 | .. | .. |
| Syncope | 3 | .. | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 1 | .. | 3 | .. | 1 | .. | .. | 1 | 1 | 1 |
| Spanemia | 1 | .. | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| Strangulation | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 1 | 1 | .. |
| Scurvy | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 1 | .. | 1 |
| Suppression of urine | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |

*Interments in the City for the Year* 1863.—Continued.

| DISEASES. | Total. | SEX. | | | | AGES. | | | | | | | | | | | | | | | | | | NATIVITY. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Males. | Females. | Boys. | Girls. | Under 1 year. | 1 to 2 | 2 to 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 30 | 30 to 40 | 40 to 50 | 50 to 60 | 60 to 70 | 70 to 80 | 80 to 90 | 90 to 100 | 100 to 110 | 110 to 120 | Adults. | Minors. | Alms House. | People of Colour. | Country. | U. States. | Foreign. | Unknown. |
| Tumour | 22 | 8 | 14 | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | 6 | 3 | 7 | 3 | .. | .. | .. | .. | 21 | 1 | .. | .. | .. | 14 | 8 | .. |
| Teething | 37 | 18 | 19 | 18 | 19 | 20 | 16 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 37 | .. | 3 | .. | 37 | .. | .. |
| Tetanus | 26 | 22 | 4 | 10 | 3 | 8 | .. | .. | 1 | 3 | 1 | 6 | 4 | 3 | .. | .. | .. | .. | .. | .. | .. | 13 | 13 | 2 | .. | 1 | 16 | 3 | 7 |
| Tabes mesenterica | 21 | 7 | 14 | 6 | 14 | 9 | 6 | 5 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 20 | .. | .. | 1 | 21 | .. | .. |
| Toxæmia | 4 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. | .. | 1 | 3 | .. |
| Unknown | 112 | 69 | 43 | 34 | 26 | 37 | 6 | 11 | 2 | 1 | 3 | 19 | 9 | 10 | 8 | 2 | 3 | 1 | .. | .. | .. | 52 | 60 | 19 | 5 | 19 | 78 | 13 | 21 |
| Uræmia | 5 | 3 | 2 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 2 | 1 | .. | .. | .. | .. | 4 | 1 | .. | .. | .. | 3 | 2 | .. |
| Ulcer | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | 2 | .. |
| Ulceration of bowels | 17 | 11 | 6 | 2 | 1 | 1 | 1 | .. | .. | .. | 1 | 2 | 5 | 2 | 5 | .. | .. | .. | .. | .. | .. | 14 | 3 | 1 | .. | 1 | 9 | 6 | 2 |
| " larynx | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. |
| " neck | 1 | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. |
| " kidneys | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. |
| " stomach | 5 | 1 | 4 | .. | 2 | .. | 1 | .. | .. | .. | 1 | 2 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 3 | 2 | .. | .. | 1 | 4 | .. | 1 |
| " throat | 9 | 4 | 5 | 4 | 5 | .. | 3 | 4 | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 9 | .. | .. | 1 | 9 | .. | .. |
| Wounds, gunshot | 310 | 310 | .. | 33 | .. | .. | .. | .. | .. | .. | .. | 33 | 184 | 68 | 20 | 5 | .. | .. | .. | .. | .. | 277 | 33 | .. | .. | 206 | 195 | 69 | 46 |
| Total | 15788 | 8636 | 7152 | 4494 | 3956 | 3995 | 1483 | 1480 | 719 | 304 | 469 | 1743 | 1570 | 1210 | 908 | 849 | 657 | 319 | 71 | 10 | 1 | 7338 | 8450 | 500 | 767 | 825 | 11756 | 3073 | 959 |

Total number of deaths reported for the year 1863 . . . 15,788

| | | |
|---|---|---|
| White | 15,021 | |
| Coloured | 767 | |
| Total | | 15,788 |
| Males | 8,636 | |
| Females | 7,152 | |
| Total | | 15,788 |
| * From which deduct still-born | 743 | |
| " " country | 825 | 1,568 |
| Net deaths in the city | | †14,220 |

| | | |
|---|---|---|
| The number of male adults | 4,142 | |
| " female adults | 3,196 | |
| " male children | 4,493 | |
| " female children | 3,956 | |
| | | 15,788 |
| Deduct still-born males | 432 | |
| " females | 311 | |
| | 743 | |
| Deduct country | 825 | 1,568 |
| Net deaths in city | | 14,220 |

* Deaths not properly chargeable to the city.
† Included in this amount (14,220) are the deaths from all the U. S. Hospitals located in our city.

*Pirogoff's Amputation.*—Dr. Addinell Hewson read the following paper on this operation, illustrating it by cases, photographs, casts, and a specimen of bone:—

Case I. Jno. Nespar, æt. 9 years, residing with his parents at 212 Juniper St., was injured on the 28th of August, 1862, in Broad St. near Race. He was standing at the time of the accident on the projecting ledge on the side of the central one of three coal cars, which were being drawn along the railroad, when he was caught by the breaker of a car going in the opposite direction and thrown on the ground in such a manner that the last of the cars which he had been on ran over his left foot and crushed the metatarsal bones close to the tarsus. He was conveyed to the hospital immediately after the accident, and, shortly after his arrival there, the foot was amputated. The choice of operations being between an amputation of the lower third of the leg, either as a Syme or higher up, and an amputation after the method of Professor Pirogoff, we determined to try the latter. In performing it the posterior tibial artery got wounded; beyond this nothing of interest occurred, the operation having been performed by the method as originally proposed.

The flaps were brought together by leaden stitches, and all the ligatures of the arteries, save that at the plantar, were brought out at either angle. No dressing was applied over the wound, but it was left uncovered. The stump was put in a fracture-box, and the weight of a brick, about 4½ lbs., was applied by means of a long and broad strip of adhesive plaster on the back of the leg to overcome all tendency to displacement of the os calcis, by contractions of the muscles attached to the tendo Achillis. Union of the flaps was quite perfect on the eighteenth day, when it was found that the fragment of the os calcis was firmly adherent to the end of the tibia. He was kept in bed for a month after this, and discharged from the hospital on the 17th of November, having been walking about on his stump for some time previous to this date. Fig. 1 represents a cast of the stump.

Fig. 1.

Case II. Tom Bowers, a tall, thin, but well-formed seaman, æt. 48 years, applied for admission to the Pennsylvania Hospital, on the 3d of March, 1863, on account of distortion of his right foot, the result of an injury received on board of one of the Mississippi gunboats in the attack on Vicksburg, in the month of June previous. The foot had then been crushed by the recoil of a gun-carriage, and the bones of the metatarsus had evidently (according to the patient's account) been much comminuted, with great contusion of soft parts, but no great amount of laceration of integument. Attempts had, therefore, been made to save the foot. Extensive phlegmonous inflammation ensued, and extended up the leg, which bore the marks of the free incisions which had been made for the escape of the pus.

The foot itself was distorted by the conglomeration of the bones, through the callus thrown out for their repair and by a large mass of cicatricial tissue on the plantar surface, all of which combined to draw the toes down and prevent the patient walking on the sole. It was thus only by a very forced elevation of the fore part of the foot and throwing the whole weight on the back of the heel, that he could get along on the limb. For this deformity he applied at the hospital, desiring to have the

leg amputated. It was evident that a partial amputation of the foot was the only remedy for him. The cicatricial mass on the sole would not allow of a Lisfranc tarso-metatarsal disarticulation, or of a Chopart (inter-tarsal). It was, therefore, determined to do a Pirogoff amputation, and the patient was admitted for the purpose.

Fig. 2.

Some symptoms of delirium tremens manifested themselves on the following day, and these were soon developed into a well-defined attack of that disease. The operation was consequently delayed until the 28th of the month (March) when it was performed in the presence of the class, in connection with another amputation (a Chopart) for a recent railroad injury.

Owing to the rigidity of all the tissues of the foot, considerable difficulty was experienced in effecting sufficient dislocation at the ankle to saw off the os calcis at the proper angle. Indeed this was found impossible without injuring the soft parts. The bone had consequently to be broken after it was partly sawn through.

The stump was dressed in the same way as Nespar's, but did not do well; the healing took place very slowly. Still the patient was well enough to be discharged on the 25th of May, eleven weeks after the operation and some two months before the patient operated on—the same day—was discharged. The os calcis was noted to be firm to the tibia on the 26th day.

This man after leaving the hospital resumed his old intemperate habits, and died in the month of January of this year, about nine months after the operation.

The cast which is here presented was made after death, and, it will be seen, his stump (fig. 2) was as satisfactory in form as any of the others. The *post-mortem* examination of the case will be referred to hereafter.

Fig. 3.

Case III. Jas. Maxwell, æt. 10 years, residing near the Drove Yard, West Philadelphia, was injured on the Penn. R. R., on the 18th of July, 1863, by a freight car, which passed over his right arm and foot, crushing the former above the elbow and the latter close up to the instep. He was immediately conveyed to the Pennsylvania Hospital, where both limbs were amputated a few hours after the accident. A flat amputation was performed in the upper third of the arm, and a Pirogoff at the ankle.

The boy reacted well, and the operation at the ankle did remarkably well under dressings of cerate and extension by means of the weight attached by adhesive strap along the back of the leg. Union took place without much suppuration, the flaps cicatrizing rapidly throughout save at the angles, and immediately in front, at a point corresponding with the union between the tibia and fibula. The os calcis was firmly adherent on the twenty-fourth day.

The operation on the arm did not, however, do so well. Abscesses formed and burrowed up under the cellular tissue, and necrosis of the end of the humerus took place. This delayed the boy's discharge for over two months, during which time he ran about on

his stump in the wards, and thereby developed the calf of this leg to a size but little less than that of its fellow.

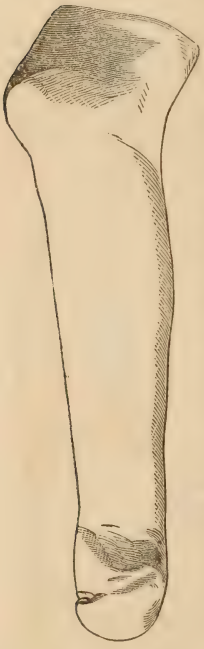
The cast which is here presented (fig. 3) was taken a few days before his discharge, which was given him 159 days after the operation.

Case IV. Morris Lammey, aged 12 years, residing in Erie Street, was injured on the 10th of August, at the corner of Seventeenth and Washington Avenue, in attempting to get off a freight train of the Penna. R. R. whilst in motion. The wheels of a car passed obliquely over his right foot, crushing it close up to the ankle-joint, literally leaving nothing but the heel. He also sustained a severe blow and cut on the head, and an extensive bruise in the lumbar region. He was brought immediately to the Pennsylvania Hospital, where a Pirogoff amputation was performed within four hours after the accident occurred.

Owing to the extent of the injury on the sole and inside of the foot, the incision had to be made further back on the sole than was done in the other cases, and the portion of the os calcis preserved was consequently less.

The posterior tibial was preserved intact. Four ligatures in all were applied to bleeding orifices. The edges were united by leaden sutures, and a dry dressing was used with the extending weight. The wound united rapidly, having suppurated very little. The os calcis appeared to be firm to the tibia on the twenty-fourth day. About this time, however, he was seized with fever, rigor, and profuse sweating, which were found to proceed from suppuration in the bruised tissues on his back; a large abscess formed here, and continued to discharge after it was opened—for over thirty days. This delayed his getting up until six weeks after the operation.

Fig. 4.



At this time the whole wound was united, save a small fistulous orifice on the front, which showed but little disposition to heal during the remainder of his stay in the institution, which continued until the 21st of November. Shortly after his discharge he visited us, and a small piece of sponge tent was then passed down into the bottom of this sinus, which was found to terminate in the bursa between the tibia and fibula. This was allowed to remain in for three days when it was removed, and the whole cavity rapidly closed up in six days' time.

He had an artificial limb applied by Mr. Palmer, in the month of January, and is making good progress in its use. Fig. 4 represents a cast of the limb. He can already run with facility on it.

Case V. Orion Crandle, aged 20 years, from Grant Co., Wisconsin, and a private in the 7th Wis. Regiment, was wounded on the first day of the battle of Gettysburg (July 1, 1863) by a bullet in the right foot. From the battle field he was sent to the U. S. Military Hospital, Broad and Cherry, where he arrived on the 6th.

The wound did not appear at first to be a serious one, and our attention was not called to it until some time after his admission, when the foot and ankle had become very much swollen and inflamed. On probing the wound it was found that the ball had passed through the astragalus, and must have consequently implicated the ankle-joint. It was, therefore, determined

to amputate the foot, and, as the tissues of the heel appeared sound, it was decided to attempt a Pirogoff, which was done on the 28th of the month (July).

On opening the joint it was ascertained that the malleoli had both become considerably denuded by the suppuration which had been going on in the joint, so that it became necessary to remove the ends of both the tibia and fibula an inch above the joint. The denudation of the bones led us to form a rather unfavourable prognosis for the operation. The inflamed condition of the tissues, especially of those composing the anterior flap, caused delay in the process of union, which took place, however, throughout by granulations, and the portion of os calcis was found to be firmly adherent to the tibia on the 28th day after the operation. When the cicatrization of a greater part of the flaps had been accomplished it was discovered that two suppurating points, one quite on the front of the leg and the other behind the line of the fibula, communicated by sinuses with a large piece of necrosed bone evidently belonging to the fibula, and which had pushed the os calcis somewhat to the inside before it had become firm to the tibia. These sinuses were dilated by sponge tent and this portion of bone detached without even disturbing in the least the union between the tibia and os calcis.

The patient is now just beginning to throw his weight on the stump, which has been entirely healed for about a month. He ran with ease on the end of the stump before the members of the College at the meeting at which this communication was made. Fig. 5 is a representation of a cast of the limb. Two of the other cases, namely, Nespar and Lammey, were also presented at this meeting.

Fig. 5.

These five are all the cases which have been operated on by the author of this communication. In all a cure followed rapidly. In two especially the result was least to be expected. These were the adults, one of whom was a seaman, advanced in years, and who had been leading an exceedingly intemperate life; and the other a soldier, who had been wounded in a battle after long and tedious marching in pursuit of the enemy, and who was operated on four weeks after receiving his wound in a military hospital, where gangrene was prevailing to a very great extent at the time. How much the firm and speedy union of the bones in all these cases was the result of the expedient resorted to, namely the strip of adhesive plaster and weight, to prevent the contraction of the muscles attached to the tendo Achillis, is a question which we are not prepared to answer. The possibility of such a union not taking place has been the only theoretical objection apparently of any importance advanced against the operation. But how far such an objection has been realized in the experience of others we have not been able to ascertain. Our own experience certainly points to its being of little, if any, value. For surely there could not be found two more unpromising cases for any operation than those of the adults here reported, and it is against the operation in adults especially that this objection would seem to have greatest force. The very perfect character of the union which took place between the bones in Bowers' case, as is to be seen in the specimen (see figs. 6 and 7) which

we had the good fortune to obtain after his death, furnishes as strong a refutation as a single instance could of this theoretical objection. Nothing

Fig. 6.

Fig. 7.

could be more satisfactory than the manner in which the cancellated structure of these bones has become blended together, making as perfect a union as ever takes place in a simple fracture or in a wound of the soft parts themselves. And this was the more remarkable considering the man's age (48 years) and his habits, which eventually produced his destruction. In cleaning the specimen much of the new cancellated structure thrown out in front, where the os calcis had to be broken, was removed.

The results of these five cases naturally suggest an inquiry as to the real value of this operation of Prof. Pirogoff.

Sufficient data have not yet been furnished to determine its rate of mortality, but admitting it to be no greater than that for amputations of the leg in the lower third, the point of election now adopted in consequence of the increased facilities of obtaining artificial legs and which has a mortality of about one in seven, or nearly one-half of what used to be the result at the old point of election in the upper third, we get by this operation of Prof. Pirogoff a stump preferable in many respects to any that can be obtained higher up the limb. In the first place this operation furnishes a stump which the patient can walk on, and this it does far better than its rival, the Syme operation, for it affords a better bony point of pressure and a greater length of limb.

All but one of the four cases operated on at the Pennsylvania Hospital were walking about freely on their stumps before they were discharged from the institution; one of them and that an adult was discharged seventy days after the operation. The exceptional case was Morris Lammey, who, it will be remembered, had a small sinus communicating with the bursa between the tibia and fibula, and which was speedily healed by the use of a single piece of sponge tent after he left the hospital.

The case at the military hospital did not walk on his stump as early as he might otherwise have done, in consequence of the necrosis of the fibula, which did not, however, prevent the union of the os calcis with the tibia, which became firm in 28 days.

No such results as these have ever been obtained from the Syme operation—for not more than one-half of the cases which have applied to Mr.

Palmer for artificial limbs have been able to bear any pressure whatever on the end of the stump, and that a long time after they were entirely healed. The only case of a Syme amputation of which we have had the opportunity of seeing the result was unable to bear his weight on it a year after it was made.

The least amount of shortening furnished by any of the cases of Pirogoff here reported was one inch, and the greatest two inches; these were both the adult cases, whereas the Syme always gives a shortening equal to the whole depth of the foot, or about from two and a half to three inches.

Then, in the second place, by this operation the tendo Achillis is in no wise injured, but, on the contrary, it is preserved intact, and becomes firmly secured to the end of the limb by the union of the portion of the os calcis to the end of the tibia. By effecting this we preserve the power of the gastrocnemius to act as a flexor of the leg, and thereby give our patients great facility of locomotion in artificial limbs.

Most persons who have undergone an ordinary amputation of the leg can walk, on an efficient artificial limb, with great ease, and even at a rapid rate, after some practice in its use; but few, if any, can however undertake to run with such an adjunct. As far as our experience goes, we have never seen a single instance, and the experience at Mr. Palmer's establishment for furnishing artificial limbs tends to confirm this; for they can recall but a single instance of any other than a Pirogoff in which this form of locomotion was possessed, and that was of a gentleman who had had his leg amputated, very low down, early in life, and who had been wearing a limb ever since. All the cases of the Pirogoff stump to which they have applied limbs have, on the contrary, soon acquired the power to accomplish this gait. The boy Nespar is the only one of those here treated who has been wearing a limb long enough to be accustomed to it, and he can run with very great facility. The soldier can run without any. Now, there is a difference between walking and running, which is not, simply, as some suppose, in the velocity with which a person moves over the ground, or the violence of the exertion which he makes to accomplish the locomotion—for a man can walk more rapidly than a child can run, and when we look at them thus moving, we at once recognize a vast difference in their gaits.

In *walking*, both feet are upon the ground at the beginning and at the end of each step, and are never both off the ground together. But in *running*, as Professor Humphry remarks,[1] the trunk, instead of being quietly delivered over from one leg to the other, which is already on the ground to receive it, is thrown forward with a spring by the muscles of the leg which is leaving the ground, and *remains for a time suspended in the air, or, rather, flying through the air.*

Now, in walking, it must be remembered, the heel of the foot which has been advanced touches the ground before the sole and toes, and that of the foot in the rear becomes elevated until its toes only are on the ground; these, then, are raised by the flexion of the ankle, and the limb, slightly shortened by the bending of the knee, is swung from behind, close beside the other limb, and advanced in front of it so as to be planted on the ground as its fellow had been.

But in *running*, the heels scarcely, if ever, touch the ground, and "the feet revolve almost exclusively upon the balls of the toes, and the advanced limb touches the ground in a more bent position, both as regards its knee and hip-joints." Indeed, both the carrying and the swinging limb are

[1] Humphry's Human Skeleton, London, p. 587.

more bent in running than in walking, when they are placed vertically beneath the trunk, whereby the swinging movement, and, consequently, the step, are still further quickened, the propulsive power is increased, and the body is carried at a lower level.

It is thus evident there is a difference between walking and running, both as regards the movements of the feet and the flexion of the limbs. It is, therefore, important for us to determine which of these is really essential.

Now it is well known that a person can walk on his heels. So, also, it is possible, although very fatiguing, for him to propel himself, in the same way, after the manner characteristic of running—that is, with a period during which neither extremity is touching the ground. Again, one can run, awkwardly it is true, with his feet held rigidly at such an angle as will cause them to come flat on the ground at each step.

It is, therefore, evident that the movements of the feet, which are different in the two gaits, and important in both, are not absolutely essential in either.

Then, again, a person with an anchylosed knee-joint can manage to walk with such, by swinging the limb around from the vertical line, whilst his weight is being borne by the other. He cannot, however, run with such a knee-joint, and this shows that flexion of the knee is essential to that gait. But flexion of the knee, it will be said, is performed chiefly by the hamstring muscles, and the gastrocnemius is always spoken of as an extensor of the foot.

This we will admit to be the case in walking, where there is not much flexion of the knee required, but great latitude of movement in the foot; but in running, especially at a rapid rate, the foot, it will be remembered, is kept in a more or less extended position, and extreme and rapid flexion is required at the knee-joint. Under such circumstances the action of the gastrocnemius must be either to steady the foot in its extended position or flex the knee. Its connection by the tendo Achillis to the os calcis natunally suggests the idea that the chief function of this muscle is that of an extensor of the foot, the heel of which can only be drawn up by this tendon; but we overlook the fact that there is another muscle, and a powerful one, attached, by this same tendon, to the heel, whose function is more evidently that of an extensor of the foot. We refer to the Soleus, which Professor Pancoast has demonstrated, by a very extensive clinical experience, to be the source of the retraction or elevation of the heel in various forms of club-foot. He has pointed out the fact that the gastrocnemius is flaccid in these cases, and the soleus hard, and in the state of firm tension—so that it is not so very evident that the gastrocnemius is chiefly occupied in extension of the foot.

In what other way can an amputation of the leg low down diminish or destroy the power of running—seeing it is preserved by the Pirogoff—unless it be by destroying the part which the gastrocnemius performs in the flexing of the knee? for the difference in the length of the stump is not sufficient to account for it, and this muscle is the only one in any way concerned in such motion, which function is entirely destroyed in the one, and not in the other.

In every amputation of the leg it will be found that atrophy always ensues of the muscles which are involved in the operation.

This at first resembles that which occurs in a broken limb, from long rest and disuse—but, unlike it, it does not cease when the patient begins to walk about, even on an artificial limb; on the contrary, it increases, even in young and growing persons, so that they have, from time to time, to

ncrease the thickness of covering or stocking with which they cover the stump, to keep it fitting properly in the socket originally made to receive it.

The rapidity of the rate at which this wasting goes on in a stump does not seem to be much influenced by the point at which the operation has been performed, as will be seen by the following table, prepared by one of my pupils, Mr. Abraham Sharples, from measurements taken in the order in which the cases presented themselves, in Mr. Palmer's establishment for artificial limbs. No data are given by which an approximation can be reached of the length of time which had elapsed in these cases after the operation; but, in the large number of cases furnished for each class, it will be but fair to suppose that there was no difference in this respect.

| Location of the amputation. | No. of cases. | Mean measurement of sound leg at the largest part. | Mean measurement of stump. | Difference. |
|---|---|---|---|---|
| In upper third . . . | 56 | 13.58 | 11.20 | 238 |
| " middle " . . . | 42 | 13.72 | 11.21 | 261 |
| " lower " . . . | 15 | 14.03 | 11.73 | 230 |
| | 113 | 13.77 | 11.38 | |

This same atrophy goes on in all the muscles of the leg after a Pirigoff, save the gastrocnemius, which, soft and flabby at first, soon becomes firm, and can be felt in a state of more or less tonic tension when the patient stands on his stump.

Thus, Crandle, who is just beginning to walk, has the muscle so soft and flabby that it was pushed to the side in an attempt to take a cast of the limb; whereas the limb of the man Bowers, who, it will be remembered, died within a year after the operation, and about seven or eight months after he had begun to walk freely on the stump without any artificial adjunct, presented, at the *post-mortem* examination, the most satisfactory evidence of the preservation of this muscle, its healthy, fleshy fibre contrasting singularly enough with the flabby and greasy condition of the other muscles of the leg.

Then the boy Nespar, who has been walking on one of Palmer's legs for a year, has never had to use any additional covering than that originally put on his stump.

All these reasons seem to us to furnish the strongest arguments for the preference we give to this operation of Professor Pirogoff over any amputation of the leg. But this is not all; we even think it preferable to either a Chopart (an intertarsal) or a Lisfranc (a tarso-metatarsal) disarticulation in the foot, where they can be performed, and for the following reasons:—

In both the Lisfranc and Chopart, and especially in the latter, there is a tendency to retraction or elevation of the heel, so that the weight of the body is thrown, in walking, on the cicatrix or end of the stump, from either of which serious inconvenience must ensue.

As an evidence of the seriousness of this inconvenience, we may mention that, as long ago as 1815, M. Villermé stated that one-twentieth of the soldiers who had undergone amputation in the tarsus, and were admitted in the Hôtel des Invalides, had to be subjected afterwards to amputation of the leg on account of inflammation and ulceration of the stump.

Now this difficulty is universally attributed to the contraction of the muscles of the tendo Achillis, and the various expedients recommended for its prevention and relief have been based on this notion, but a careful consideration of the form of the human foot and its manner of supporting the

body will show this distortion must necessarily follow these operations of Lisfranc and Chopart, independent of any muscular action which may be brought into play.

Thus the foot is constructed in the form of an arch, the summit of which is at the astragalus. The two pillars of this arch differ very much from one another. The posterior one is about half the length of the anterior. It consequently descends far more abruptly. It also consists of but a single bone, the os calcis, whereas the anterior pillar not only includes the metatarsal, but also the cuboid, the three cuneiform, scaphoid, and the head and neck of the astragalus, "so that when the foot rests flat upon the ground the chief part of the weight is transmitted from the tibia forwards."[1]

Now lop off a portion of this anterior pillar, and that which is left must of necessity become so much depressed that it will touch the ground in standing, for it is through it that "the chief part of the weight is transmitted." This will throw the weight still more forward, and less of it will be transmitted through the os calcis. Indeed, the more perfectly a foot is arched, that is, the more vertical its os calcis is placed, the worse must be the distortion after one of these operations; for the plantar face of the os calcis and the lower edge of the scaphoid facet of the astragalus must, in the Chopart operation, be driven on the ground when any weight is thrown on the limb, and a similar depression, though in a less degree, must occur in the Lisfranc.

A complete and permanent severing of the tendo Achillis cannot have any effect in preventing such a consequence, no matter what influence the muscles attached to that tendon might exert in increasing the evil.

To all this it may be answered that cases of successful prevention of the elevation of the heel after these operations by a division of the tendo Achillis have been reported, by such men as Velpeau, Robert, and others. This we cannot deny; but others equally reliable have reported tenotomy an absolute failure in these cases; and how are we to reconcile the discrepancy between such authorities?

We had thought ourselves successful in preventing the difficulty after the Lisfranc operation by means of the weight, as we have used it after the Pirogoff; for when we discharged the cases (four in number) from our care, they did not evince much if any disposition to it, but when we came to examine these cases a year or more afterwards we discovered the deformity as complete as when no expedient is resorted to. A temporary success was, with us, as it has been, probably, with others, mistaken for a permanent result. Indeed, it would seem impossible for any expedient looking to a prevention of the contraction of the muscles of the calf as the source of the difficulties to succeed; and it is equally impossible to restore the proper elevation of the os calcis in front after either of these operations. Hence we think our preference for the Pirogoff well founded.

*Spotted Fever.* Dr. JEWELL reported a case.

The following case of the epidemic disease which has prevailed in some sections of our city for upwards of a year, visiting several of the adjoining neighbourhoods, and making its appearance in other districts of our country under the popular, but perhaps erroneous title of "spotted fever," may prove of some interest to the pathologist, especially through the revelations

[1] Humphry, op. cit., p. 494.

of the *post-mortem*, in the event of its not affording a clear illustration of the true character of this formidable disease.

Leonard S., aged nine years, residing on 4th above Race St., in this city, was in the enjoyment of perfect health until Thursday evening, the 11th of February, ult., when he complained of uneasiness and stiffness in his lower jaw and muscles of the throat. No particular notice was taken of it, and he retired to bed as usual. During the night his mother said he was restless, and continually throwing off the bed-clothes. In the morning he declined getting up, telling his mother he could not go to school, as he was sick. She noticed that his speech was thick, mumbling his words, as if his tongue or throat were swollen, and fearing he was not well, encouraged him to remain in bed.

Late in the morning, however, he made his appearance in the sitting room, kept close to the stove, complained of being cold, and in a short time had a severe chill, his skin assuming quite a purplish hue. He was covered up on the settee, some warm tea was given him, and as the intensity of the chill subsided, his mother gave him two purgative pills.

In the afternoon he became very sick at the stomach, and commenced vomiting; his skin, however, retaining its bluish or collapsed appearance. Continuing to grow worse, retaining nothing on his stomach, and complaining of violent pain across the forehead, with extreme restlessness and apparent suffering, Dr. Housekeeper, of Kensington, was sent for, who saw him at 10 o'clock in the evening of Friday. The doctor informed me that he observed nothing in his symptoms warranting alarm, and prescribed a neutral mixture for his gastric irritation, with mustard on the surface of the stomach, and also to the back of the neck and ankles, for his pain in the head.

During the night his mother said he continued to be restless, vomited frequently, would cry out with the pain in his head, and when touched or moved, would complain of extreme muscular soreness.

On Saturday morning the Dr. found him in convulsions, and his body covered with what he called a purpura eruption.

I saw this patient by request of Dr. H. about 2 P. M. Saturday; found him unconscious, lying on his left side, knees drawn up, muscles of the back of the neck retracted, and head thrown backwards, permanently. His eyeballs flushed, with dilated pupils, and fixed steadily in one direction, the lids being wide open, and the pupils insensible to light. The skin was below a natural temperature, lips and hands congested and of a dark purplish colour, pulse slow, but scarcely perceptible. Scattered over his face, body, and extremities, were to be seen numerous spots resembling petechiæ, of a dull red colour, varying in size from a pin's head to that of a half dime, not elevated nor affected by pressure. The boy appeared restless, in constant motion, with considerable jactitation of muscles, and making frequent spasmodic efforts to vomit. I ordered dry cups to the nucha and spine, mustard to the lower extremities, and a stimulating turpentine enema. His condition forbade the administration of further treatment, as the case appeared to be hopeless. He passed into another severe and protracted spasm after I left, and died at 5 P. M., after an illness of 48 hours.

By permission, an autopsy was made by Dr. Packard, on the next afternoon, 24 hours following the death, in the presence of Drs. Housekeeper, Mayburry, and Mr. Ewing, student of medicine, and myself. I am indebted to the Dr. for the accompanying notes of the appearance of the different structures, as presented by the examination.

Body not very rigid. Skin very white; hair red. A few scattered

petechiæ were observed over the chest, arms, belly, and legs; none on the face. A good deal of hypostatic congestion of the posterior or under portions of the body, of the scalp over the occiput, and of the ears, was noticed.

On cutting through the scalp, the blood flowed away more freely than usual, and it was found that it was abnormally fluid within the veins.

The vessels of the dura mater were markedly congested with fluid blood, very dark in colour. A yellow effusion existed in the subarachnoid space; it proved to be of a serous character, and to exist in the spinal canal also.

The substance of the brain was firm, with very little if any congestion. In the lateral ventricles there was a somewhat abundant reddish serum, and on cutting into the brain substance anywhere, the gap would soon fill up with serum exuding from the cut surfaces.

*Thorax.*—The lungs were entirely healthy, except that the middle lobe of that on the right side was fastened to the chest-wall by old pleuritic adhesions.

About ℥ij of serum were observed in the pericardium. The heart was firmly contracted, and contained some small, very black, softish, currant jelly-like clots. One of these, in the left ventricle, was in part firm and pale. The blood in the cardiac veins was fluid, and could be readily pressed along the vessels, returning immediately upon the pressure ceasing.

*Abdomen.*—Liver healthy. Gall-bladder distended with bile. Spleen healthy. Pancreas also.

The blood in the mesenteric veins presented the same fluidity as did that in the thorax and cranium.

Mesenteric glands enlarged, and many of them congested.

Some purpurous spots existed here and there on the mesentery.

The mucous membrane of the stomach was very deeply congested at the central part of the organ, and especially towards the lesser curvature; the congestion fading towards the cardiac and pyloric extremities.

Peyer's patches were normal.

The kidneys were deeply congested. A portion of the left kidney, in which the congestion was deeper than it was in the right, was sent to Dr. Fricke for examination.

One of the purpurous spots on the surface of the abdomen was cut through, and found to be caused by a deposit or ecchymosis in the substance of the true skin, and not upon a mere effusion beneath the cuticle.

Dr. Fricke examined the kidney minutely, and in a note, writes:—

"The minute anatomical structures are all normal, and although the colour was such as to induce the belief that the organ might have been highly congested, I need not remind you that the deep colouring of the kidney in *post-mortems* is in no wise a trusty symptom as to the healthy or unhealthy state of the organ."

From the character of this case, and the results as disclosed by the autopsy, together with what I have observed in several similar cases coming under my notice, and from all the information I have gathered through other sources, I am inclined to the opinion that the disease still prevailing in our city, and designated by many as "spotted fever," is not altogether new or unknown either in Europe or in this country. That it has not only been noticed by several writers on the practice of medicine, but has been described by them under the name of cerebro-spinal meningitis, and has, within a few years past, prevailed at different periods, both in Europe and in this country, in the character of a formidable epidemic. According to a statement made by Dr. Bell, in his work on the *Theory and Practice of Medicine*, an analogous disease had prevailed at different times in

Europe between 1510 and 1805. This same author furnishes complete references to its appearance in different cities and towns in France between 1837 and 1842. Of its having been noticed in Italy in the winters of 1839, '40, and '41, and in Gibraltar in 1844. Dr. Bell also quotes, Dec. 1842, from a paper on the same disease by Dr. Richardson, in the *Western Med. and Surgical Journal.*

Dr. Wood, in his *Practice,* describes it as occurring epidemically, and refers to *Ranking's Abstract* for the account of its having prevailed in Ireland in 1847, as described by Drs. Darby and Mayne, in the *Dublin Journal.*[1]

In this country the disease made its appearance at the commencement of the present century, when it occurred at first in Massachusetts, and is described by Dr. Gallup, of Vermont, and North, of Massachusetts, as "spotted fever." In the 1st vol. of *Chapman's Medical Journal,* p. 167, will be found a review of a pamphlet by Dr. E. Hale, Jr., of Boston, of spotted fever, as it prevailed at Gardiner, Maine, in the spring of 1814; and although it has been doubted recently whether the epidemic, as described by him, was the disease now existing in this city, I believe it to have been essentially the same, although it is true, its visitation at that early period exhibited symptoms which are not prominent in the present epidemic.

The reviewer of the above paper refers to the fact of "spotted fever" having appeared in 1806, in different parts of New Hampshire and Massachusetts, as described by Gallup and others, and after lingering a short time in that part of the country, gradually spread itself over the whole of New England, entered into New York and the Canadas, from thence pursuing a direct track through the interior of Pennsylvania, invaded Ohio and Kentucky, extended to northwestern Virginia, and finally to the southern extremity of the United States. He also traces its appearance in Philadelphia in 1813, where he says for a short period it assumed a malignant form, and the victims of its ravages were numerous, after having committed its frightful ravages upon the inhabitants of the circumjacent country.

In the *N. O. Med. and Surgical Journ.,* vol. v., p. 295, will be found an interesting history of the disease as it appeared in Montgomery, Ala., in the winter and spring of 1848, under the title of epidemic meningitis.

In vol. 4th of the same journal, will be found papers by Dr. Hicks, of Vicksburg, and Dr. Taylor, of Whiteville, Tennessee, as the disease prevailed to some extent in those places.

The report of the Medical Society of Pennsylvania, for 1863, contains an account of the epidemic as it prevailed in Montgomery Co., in the winter and spring of '63.

Within a few days, I have had access to a carefully drawn up history of "spotted fever," or more properly "epidemic meningitis," by a Fellow of the College, giving an account of the disease as it has prevailed, especially in the United States, tracing its visitations as far back as the commencement of the present century, and following its appearance down to the present time. The writer of this interesting history has no hesitation in identifying the present epidemic with the spotted fever as it has prevailed

[1] An account of the disease is also presented by Dr. Thacher, in his *American Practice of Medicine,* as it prevailed sixty years ago in the New England States. This account is based upon a report made to the Mass. Med. Society by a committee consisting of Drs. Thomas Welsh, Jas. Jackson, and John C. Warren.

Dr. Condie, in the 5th edition of his work on *Diseases of Children,* gives a very elaborate account of the disease.

"at different periods, in several portions of Europe and of the United States; exhibiting, it is true, in some of its visitations, certain symptoms which were absent in others, and hence receiving from the writers, to whom we are indebted for a history of its several occurrences, different names according to the predominance of some one symptom or set of symptoms." He is convinced that they are essentially the same, wearing the same livery, and characterized by similar "features, viz., suddenness of attack, intense headache and spinal pain, followed by stupor or coma, and in the greater number of cases, by a peculiar eruption upon the surface, having a very close resemblance to the ecchymoses of scurvy."

The author of the history to which I refer gives an outline of Dr. Thacher's description of the disease, which in all respects corresponds with that which is now prevailing in our vicinity.

He also presents an account of the disease as given by Dr. Edward Page, of Hallowell, Maine, as it was observed by him between 1810 and 1816. This writer, he says, makes four divisions or varieties of "spotted fever," namely: 1st, the tetanic or cerebro-spinal; 2d, the catarrhal or pneumonic; 3d, the gastro-enteric; 4th, the algid.

There may be those familiar with the several forms of the disease, as seen at this time, who will be in possession of sufficient evidence to corroborate the truthfulness of the divisions, as suggested by Dr. Page. We are not, however, prepared to adopt his theory. His first and second divisions include the symptoms to be found with very little variation among the cases I have witnessed.

The disease prevailed extensively in Central and Western New York in 1857, as will be seen in the *Transactions of the Medical Society of the State of New York*, in three several papers by Dr. Thomas, of Utica, Dr. Kendall, Clay, Onondaga Co., and Dr. Squire, of Elmira.

*Case of Cerebro-Spinal Meningitis, sometimes called "Spotted Fever."*—Dr. Stillé related the following case:—

A young gentleman, 19 years of age, of uniformly good health and of a sound constitution, resided in one of the most salubrious districts of this city. He was occupied every day in a wholesale dry-goods store in Chestnut Street, between Second and Third Streets, and is not known to have been in any neighbourhood or house in which the disease he was attacked with existed. An elder brother had been ill with typhoid fever from the first week in January, and, during that month, had often been attended by night, and, occasionally, during a portion of the day, by the subject of this notice. But from the first week in February, this attention had become unnecessary, and there is no reason to suppose that the health of the younger brother had been impaired by it.

On Friday, February 26th, he appeared perfectly well, and sat with the other members of the family, engaged in cheerful conversation until after eleven o'clock at night. He had taken his meals with his usual appetite, and of all the social circle there was certainly not one who had the appearance of more perfect health.

At 3 o'clock A. M., on Saturday, he waked in a violent chill, accompanied with a sense of extreme prostration, frontal pain, which grew more and more intense, and aching pains in the back and limbs. He did not vomit, nor had he any stool. He was very restless, and breathed hurriedly. I first visited him at 9 o'clock. His face was pale and his features sunken; the lids nearly covered the eyes; the conjunctivæ were strongly injected;

the pupils were of normal dimensions and equal; the lips slightly bluish, the tongue pale and moist; the skin nearly of a natural temperature but somewhat inelastic under pressure; the abdomen natural in form and sensibility; no eruption existed anywhere upon the skin. The hands and feet were not cool; pulse 85, regular, and of moderate force. The general aspect of the patient was that of a half intoxicated person in pain, and exhausted by it. He turned languidly or abruptly from one side to the other, as one whose sleep is broken by bodily suffering or distressing dreams, and it was noticeable that he more frequently threw his head backward than bent it forward, as persons in the typhoid state of diseases generally do. He answered questions promptly and intelligently, said that he had excruciating pain in the head, and some pain in the back and limbs; then began to moan and to resume his uneasy slumber.

At half-past twelve o'clock I found him sleeping, breathing very rapidly, with a pulse of 120. He seemed unwilling to be aroused; said he had no pain in the head, or elsewhere. The countenance was less pale; the eyes more intensely injected; the skin rather doughy, but neither cool nor hot; no eruption anywhere. No tympanitis. He had vomited after drinking a little wine and water, and had one semi-liquid stool.

At half-past five he had had three liquid stools since the previous visit, and vomited half an hour after taking five grains of carbonate of ammonia, in solution. The jactitation had been continual, when not interrupted by somnolence. The understanding was clear when once the attention was fixed. Complained of no pain. The pulse remained as frequent as before, but was somewhat feebler. The skin was warmer and softer. The upper and lower limbs, but the former in a much greater degree, and the chest and abdomen slightly, presented numerous purplish spots, varying in size from less than a line to half an inch in diameter. One on the sole of the foot was an inch long. Some were rounded or oval, and others elongated, and others again, were evidently formed by a cluster of spots, and presented a very irregular outline. They were not preceded by any erythematous redness, were not at all elevated, nor did they change their shade of colour under pressure; but every hour they grew darker.

At 9 P. M., every part of the skin was covered with ecchymotic spots which were duskier than before. Warmth of surface nearly natural in degree; pulse 160, weaker; no coma, but frequent short periods of sleep, during which the breathing became hurried and laborious; the head was frequently thrown backward, and the body bent in the same direction, but without rigidity. Consciousness and intelligence little if at all impaired.

About 11 o'clock, the agitation became very great, as if from some undefined distress, and was attended with moaning. The breathing grew very rapid, and at times as if embarrassed by an obstacle in the larynx, but there was no rattle or gurgling; the head and shoulders were bent backward; gradually the respiration grew shorter, the pulse could not be felt, the skin was moist with a warm perspiration, and everywhere of a dusky hue; the forearms and hands were almost uniformly purple, and the face turgid; many ecchymotic spots on the lower limbs and trunk had attained a diameter of one or two inches, and were almost black. Death took place without any spasmodic phenomena, by rapid although gradual asthenia, precisely at midnight.

Dr. Stillé made some general remarks upon the disease, stating that the history of its several epidemics proves it to have no connection with the war which the nation is now engaged in, as some persons ignorantly suppose;

and also, that all who had observed the disease during the present or in former epidemics agree that it is not contagious. He remarked, further, that the notion of its affiliation with influenza had no further ground than the asthenic diathesis common to the two affections, and to all others prevailing simultaneously with them. He also contended that "spotted fever" is an inappropriate designation for a disease in which a majority of the patients present no spots at all, and that it is, in reality, an epidemic cerebro-spinal meningitis of a typhoid type.

1864, *April* 6. *Cases of Spotted Fever.*—Dr. Levick reported the following cases of spotted fever :—

C. R., æt. 5½ years, residing at 324 Julianna Street, a patient of Dr. Fricke, to whom I am indebted for notes of the case, was in ordinarily good health on the 26th of February. At 5 o'clock A. M. of the 27th, he complained of violent pains in the head, back, limbs, and especially about the knees. He had fever, great thirst, and vomited freely after taking anything. Dr. Fricke saw him at about 9 A. M., when his face was rather flushed, pulse 120, pains severe, red spots, not of a bright colour, under the epidermis, principally on the lower extremities and abdomen. Ordered acetate of ammonia. At 10 the child was in a profuse perspiration, very feeble pulse, 144, extreme pain in the head, back, and limbs, with great tenderness of the surface. I saw him with Dr. F. an hour later; the skin was now cold and mottled, pulse scarcely to be counted, and shattered, numerous petechiæ on the limbs and abdomen. Dr. Fricke had ordered him carbonate of ammonia gr. j every hour, with milk punch. Carbonate of ammonia gr. ij, alternately with five drops of oil of turpentine, and an enema of two teaspoonfuls of turpentine, were now given him, the punch continued as before, turpentine applications to be made to the surface of the body. At 3½ P. M. the child was rapidly becoming unconscious, pulse 144, the eyes injected. At 8 P. M. semi-conscious, though restless, head much retracted; treatment as before, and three grains of quinine every hour, until nine have been given. 28*th*, 9 o'clock A. M. The child a little more conscious, pulse 144, very weak, had taken sixteen grains of sulphate of quinia since last visit, in addition to the turpentine and brandy. Dr. Fricke writes: "I may here state that the child took nearly one pint of strong brandy in milk punch, daily, for three and a half days." Treatment continued; the quinine to be given in doses of two grains every three hours. 29*th*, 9 A. M. Pulse 100, head still retracted, though less so than yesterday, nearly unconscious, but may be roused, grinds his teeth. 7 P. M. More conscious and seemingly better; the spots, which have been pretty freely distributed on the legs, abdomen, and arms, are beginning to fade, excepting those of large diameter. *March* 1*st*, 9 A. M. The child is conscious, though grinding his teeth, head still somewhat retracted; treatment continued, and a turpentine enema in the afternoon, and a *hot* bath at night. 2*d*, 9 A. M. Pulse 96, had a good night's rest, though at times somewhat delirious; treatment continued. 3*d*. Pulse 84; child asked for nourishment; movement of head and neck still painful; treatment continued. 5*th*. Turpentine omitted, as mouth is vesicated, no strangury at any time; continue quinia, five grains daily. 6*th*—13*th*. Child took a little mineral acid, and beef-tea, the chief nourishment which he has had during his illness. Complaining of severe pain in the head, and having previously suffered from abscess of the ear, warm applications were made to the head and a silk oil-cloth cap applied. This

was followed next day by a copious discharge from the ears to the great relief of the little patient. 13*th*—19*th*. Some headache and stiffness of the muscles of the neck continue, has a little diarrhœa, had not slept for two or three nights, and on the 19th took gr. $\frac{1}{8}$ of sulphate of morphia. 20*th*. Slept well. 21*st*. The child has taken no medicine during the day for some time, and appears to be convalescent.

After this I ceased to visit the little patient, who steadily improved, regained his entire consciousness, played with his toys, and partook of his food at the family dinner table. The petechiæ and all acute symptoms of his disease had disappeared. Quite recently I have seen him with Dr. Fricke, and find him confined to bed again, in a dull, semi-stupid condition, roused with difficulty, without paralysis of either extremity, much emaciated, and presenting much the appearance of tuberculous disease, of which there is no positive evidence, though several members of his family have died of this affection.

Through the kindness of Dr. Fricke, I was called to visit a little child, residing on Callowhill Street near Fifth Street. This little patient, eighteen months old, was perfectly well on retiring to rest on the previous night. At 1 o'clock she awoke and complained bitterly of her head. At 9 A. M. she presented the following appearance: The skin uniformly and finely mottled, of a purple hue, with here and there a few isolated spots of a deeper purple. Eyes slightly ecchymosed, presenting a dull, stupid, and at times an astonished appearance; pulse 60. Carbonate of ammonia given, and the hot bath and turpentine used externally. Child died at 3 P. M. of the same day. The autopsy was most carefully made at 4 P. M. next day, by Dr. Packard, in the presence of Dr. Fricke, Mr. J. C. Warren, and myself, and presented the appearances enumerated below.

*Exterior.*—Decomposition of the walls of the abdomen, which are of a green colour. The surface of the body universally mottled; vibices on the knees, petechiæ on the legs. *Head.*—On removing the calvaria a large ecchymosis was found under the pericranium near the sagittal suture. The vessels of the dura mater were filled with dark fluid blood, which could readily be pushed aside by the handle of the scalpel. The substance of the brain and of the medulla oblongata was natural in its appearance and consistence. There was no effusion in the ventricles, and the most careful examination failed to detect the slightest evidence of inflammatory exudation. *Abdomen.*—Blood fluid in the mesenteric veins. The intestines were everywhere dotted with minute extravasations of blood, both on their outer and inner surface. Similar ecchymoses were found on the bladder, in the kidneys, and on the diaphragm. *Spleen* healthy, the Malpighian bodies prominent. *Mesenteric glands* enlarged; the solitary glands largely developed, Peyer's glands unaffected. *Thorax.*—Ecchymoses on the diaphragmatic pleura. The lungs contained large quantities of fluid blood. The left ventricle of the heart contained two soft coagula about the size each of a pea. In the right heart the blood was thin and fluid, looking not unlike claret wine. There were no coagula in the right side.

A brother of this child, aged eleven years, was seized at the same time, and under the same circumstances as the case just reported. At 9 A. M. of the 6th ult., the condition presented was much the same as that of the infant, excepting that the petechiæ were more distinctly developed. Ammonia, turpentine, internally and externally, were prescribed as before. At 5 P.M. the boy appeared to be moribund, pulse scarcely to be felt, skin cold; patient almost comatose. Although the case was regarded as a hopeless one, it was determined to give three grains of quinia, to be re-

peated every hour until fifteen grains had been taken. At our visit next morning, much to our surprise, not only was our patient alive, but his consciousness restored and pulse almost natural. The quinine in doses of two grains every two hours with oil of turpentine gtt. v, every second hour, and phosphoric acid and brandy were now given. Under this treatment the patient greatly improved, though at times delirious, gave rational responses, and appeared to be convalescent. Great irritability of stomach supervened, rendering it impossible to give him medicines, and on the fourth day of his illness he died apparently of pure exhaustion, having had no paralysis, and retaining his consciousness to the last. In consequence of the great distress of the parents, no autopsy could be obtained.

A brother of this boy was suddenly seized on the second day of his illness with a chill, severe pain in the head and back, with universal achings and soreness of the muscles, leading us to fear that he, too, was suffering from the same disease as that of his brother and little sister. He was at once put on the free use of quinia and brandy, and in a few days was well again, his disease having ended in an attack of angina with some diphtheritic deposit. An older sister at the same time was seized with similar symptoms, and, under similar treatment, her disease terminated, after a few days, in an attack of catarrhal fever.

*March* 16, 1864, I was called by Dr. Fricke to visit H. S., æt. three years, residing in Rawle Street. He had been entirely well until the preceding evening; during the night he complained of severe headache with nausea, and vomited freely. Dr. F. saw him at 4 P.M. next day, at which time his pulse was 146 and shattered; there was great depression of the system, and the surface was pale. There was slight injection of conjunctiva, and severe pain in the calf of the left leg. At nine o'clock next morning, when I first saw him, his condition was much that already described, the tongue was moist and creamy, there was slight strabismus, and there were several vibices about the knees, and numerous petechiæ on the left side of the face near the eye, with a few well-marked petechiæ on the leg. There was general soreness of the muscles, especially of the calf. Dr. Fricke had already given him gtt. v ol. terebinth. alternating it with phosphoric acid every hour. Flying sinapisms had been applied to the surface, and an enema of a teaspoonful of oil of turpentine given three times during the afternoon and night. 17*th.* Head much retracted; pulse 120; had been very restless during the night. One ecchymosis was now noticed beneath the conjunctiva, skin warmer, pupils not affected. Had taken brandy freely; now ordered quinia in grain doses every two hours. 18*th.* Very restless, grinds his teeth, head strongly retracted, muscles of the neck rigid, pulse 120. Had taken since our last visit four ounces of brandy, four grains of quinine, and turpentine as before. 19*th.* Spots fading, pulse 120 with some volume; has taken same quantity of quinine and brandy, with beef-tea, as during the preceding twenty-four hours. Had also one-eighth of a grain of morphia at bedtime. Eyes much injected. Thinking him to be over-stimulated, it was ordered that the quantity of brandy administered should be diminished. 20*th.* Pulse 84, but very weak, his father having failed to give him any brandy; had been very restless during the night until he had taken f℥ij sol. sulphate of morphia. Resume the brandy, ordered an enema of turpentine, and three grains of quinine daily. 28*th.* Pulse 96, no retraction of the head, spots nearly gone. From this time convalescence could be dated, and though there were one or two partial relapses the little patient has since improved, and is now running about again.

It will be noticed that the treatment resorted to in the cases reported, and which appears to have been to some extent successful, was the early exhibition of large doses of sulphate of quinia, brandy, and the oil of turpentine, the latter given by the mouth, the rectum, and applied externally. In addition to this, care was taken to sustain the temperature by the use of artificial heat, in other words, the treatment was an actively stimulating one. In one of the cases referred to, a boy five years old took in one day sixteen grains of quinine and nearly a pint of brandy. But while I believe that our hope of success is to be found in the free exhibition of these remedies, and that we are not to be deterred from their use by the existence of delirium, stupor, or even coma, I do not believe that it is desirable to continue the exhibition of these enormous doses of quinine for any great length of time. Let the system be decidedly affected by the medicine, and after this let the dose be gradually reduced until it be in the quantity usually regarded as that sufficient to keep up a moderately tonic influence. On the other hand, it is well to be aware that there exists a tendency to a recurrence of this disease, not indeed to its full development again, but a tendency to slip back to a typhous condition of system which it is highly important to guard against, and which is best averted by a return for a time to full doses of quinine.

When the subject was under discussion last spring, Drs. H. Hartshorne and Condie called the attention of the College to the close correspondence which exists between "spotted fever" and the epidemic cerebro-spinal meningitis described by the French and Irish writers, an account of which may be found in most of our recent works on the practice of medicine. At the last meeting of the College Dr. Stillé gave us some interesting remarks on the same subject. I do not doubt that the correspondence referred to does exist, nor do I doubt that there may be in many cases of spotted fever, especially when it assumes the chronic form, inflammation of the meninges of the brain and spinal cord, but that this is necessarily present, constitutes the essence of the disease, I do not believe. In scarlet fever we have almost uniformly inflammation of the throat, but no one looks upon scarlatina as mere angina; in measles we have coryza and catarrh, but rubeola is not simply inflammation of the air-passages. Still more strikingly there are in typhoid fever inflammation and ulceration of Peyer's glands with suppuration of those of the mesentery, but certainly no one regards this fever as simply meso-enteritis. These are concomitants, frequent concomitants of these diseases, local manifestations of a general constitutional disorder, which may be present or may be absent. So with spotted fever. That this is not simple cerebro-spinal meningitis is proved by the fact that though present in some cases, in others all traces of intracranial inflammation have been absent, and this too when all the other phenomena of the disease have been characteristically developed. Nor are the remedies which have been found most useful in spotted fever those which are recognized as suited to inflammation of the brain or its meninges. The testimony which comes to us from almost every quarter, with astonishing unanimity, is that bloodletting, mercury, and other familiar antiphlogistic measures are utterly inefficient, are indeed worse than useless, while the only medicines, the exhibition of which has been attended with any success, are quinia, brandy, and turpentine, the remedies everywhere recognized as those suited to the typhous state. Tried thus by the therapeutic test the disease fails to hold its position as one of pure inflammation, unless indeed we abandon all our former standards of pathology and of treatment. Hence it is that the name cerebro-spinal meningitis is an objectionable one, as giving erroneous im-

pressions as to the nature of the disease, and as leading to an injudicious and dangerous course of treatment. It would seem preferable, therefore, for the present at least, to adhere to the name of "spotted fever," which, though open to many objections (not the least of which is the danger of thus confounding the disease with maculated typhus), is the name by which it has been known for more than fifty years. For spotted fever is no new disease. The medical literature of the first twenty years of this century, especially that of the New England States, is replete with information respecting it. Accurate descriptions of its symptoms and of its *post-mortem* appearances, corresponding in both these respects with those of the present day, are given by Drs. Miner, Gallup, and many other writers. In fact these physicians appear to have been as familiar with spotted fever as we of the present generation are with typhoid and typhus fevers.

If then this disease be not simple cerebro-spinal meningitis, what is it? I believe it to be, as I have elsewhere expressed it, a malignant febrile disorder, due to a widespread epidemic influence, which acts with intensity on the blood directly, or indirectly through the nervous system. Thus poisoned, the blood is altered in its nature and in its function. Hence follow deranged innervation, impaired nutrition, passive congestions, escape of blood into various tissues, delirium, coma, prostration, and death, the usual results of septicæmia. So far as I can discover, in every autopsy of this disease on record the blood has been found to be fluid, both in the heart and great vessels, or if coagula have been found in the heart they have been small and soft.

More than a year ago, when the account of this disease was first given to the College, I ventured to inquire if the cases thus reported might not be but illustrations of *a malignant form* of the epidemic influenza which was then prevailing in our midst. I was led to make this inquiry by reasoning from analogy, and by noting that the symptoms of spotted fever, as then first given us, were those of influenza greatly exaggerated—if I may so express myself, intensified. I had then seen no cases of this disease, in fact was not aware that such a disorder as spotted fever had ever before prevailed. Observation has since shown me that the two diseases, during the last two years, have uniformly prevailed together in our community, and that in more than one instance, while one member of a family has suffered from the one, other members of it have suffered from the other form of disease. Research has proved that this coexistence has been the case from the earliest times. I believe that there exists an adynamic or typhous epidemic influence extending widely over our country; that this influence, in its mildest manifestation, exhibits itself in the form of influenza or epidemic catarrhal fever, in its most intense degree in the disease known as spotted fever, while between these two extremes are different grades of disease, differing not only in severity, but in their phenomena. I believe that the symptoms vary as the force of the disease is expended, especially on one tissue or organ rather than another; that in one instance we may have simple irritation of the air-passages, as seen in the *epidemic catarrhal fever;* in another the lungs may be especially involved, exhibiting the phenomena of epidemic *typhoid pneumonia;* in another the brain and spinal cord, presenting the symptoms of *cerebro-spinal meningitis;* while in some rarer cases the blood itself appears to be greatly affected, without presenting at once the obvious phenomena of disease of any special organ. I believe that these are all but varied manifestations of one and the same morbid influence, and that the same principles must guide us in the treatment of them all. It is to the constitutional affection, and not to

the mere local disorder, that our remedies must be addressed. It is worse than useless to treat these incidental inflammations as ordinary idiopathic phlegmasiæ, and I cannot but believe that our main reliance in the treatment of all these morbid phenomena must be placed in the free exhibition of quinine, brandy, and turpentine.

*Spotted Fever.*—Dr. D. Gilbert said that he had listened to the reports read and remarks made with great interest. He had seen numerous cases during the last year in consultation, and had three cases in his own practice. He had been called to meet Drs. Service and Wilson, of Schuylkill Falls, when the disease first appeared there in Feb. 1863. He subsequently saw cases with Dr. Wm. Corson, of Norristown, and more recently with Dr. Senderling, of Richmond St., Dr. Cooper, of Arch St., Dr. Knight, of Vine St., in this city, and Dr. Knorr, of Kensington. These cases were all characterized by the symptoms which have been so well described this evening. A large majority of them terminated fatally in from twelve to seventy-two hours after the onset of the disease. Dr. G. stated that cases very similar, and probably identical with this terrible malady, had come under his observation at different periods within the last twenty years. He remembered two cases which occurred in Gettysburg, in the practice of the late Dr. C. N. Berlucchy, of that place, in 1844, or thereabout, in both of which there was sudden attack by chill, great depression of the vital powers, with cerebro-spinal complication, stupor, coma, and death, the first in twelve, and the second in sixty hours. Another case occurred about sixteen years ago in this city, in the practice of Dr. Fricke, in the person of an adult male, who died in ten hours after the first symptoms were observed. In this there was a *post-mortem* examination. The most remarkable condition developed was the spotted appearance of all the serous surfaces of the chest and abdomen. About three years ago he was requested to meet Dr. R. J. Levis, of this city, in consultation, in the case of a child aged about five years, in a family in Marshall St. Another child, aged about three years, in the same family, had just died, after some twelve hours' illness, and the case now under treatment was similarly attacked. In both, there was sudden seizure by chill, followed by imperfect reaction, delirium, stupor, sinking, and death. A few days afterwards a child in another branch of the same family, living in the same neighbourhood, was attacked, but there was a more perfect reaction after the chill. The disease first seemed to localize itself upon the viscera of the chest, then of the abdomen, and finally on the cerebro-spinal region. The eruption appeared indistinctly on the third day. The general suffering was intense; there was soreness in all parts of the body, and the writhing and irrepressible contortions of the body and limbs were frightful. This case recovered. These cases occurring sporadically, and prior to the late epidemic, could not be classified with any of the commonly known diseases, and were considered by all the medical gentlemen who saw them as rare and anomalous.

Of the cases which Dr. G. had in his own practice since the first outbreak of the epidemic in the suburban districts of this city, the first occurred in March, 1863. The patient, aged about thirty-four years, is an attorney of high position in this city. The attack was characterized by the usual symptoms, the spots appearing on the second day. The delirium was present during the night, and the pain in the head and extremities was intense, without any intermission. In this case, the stupor and coma were not so profound as they are usually met with in the more violent cases. After reaction was fully established, to relieve the cerebro-spinal

distress, twenty leeches were applied to the nape of the neck, which afforded marked relief, and then large doses of sulphate of quinia were given, which were followed by a speedy amelioration of the symptoms. Convalescence was protracted, however, and final and complete recovery did not take place until two months had elapsed.

As the Board of Health was then, through its sanitary committee, investigating the cause and nature of the epidemic at Schuylkill Falls and Frankford, Dr. G. invited Dr. R. La Roche, the chairman of that committee, to see this case with him. Dr. La Roche at once declared it to be a genuine case of spotted fever.

The second case occurred in the person of a clergyman of this city, aged about thirty years. He had a severe chill on the evening of the 27th of Dec. last. In this case numerous spots appeared on the face, body, and extremities, on the second day. Quinine, in full doses, constituted the principal feature of the treatment, and in ten days he was so much better, that it was thought safe to allow some of his friends to see him. The quinine was discontinued, and the elixir cinchona given instead, but the fever returned, and recourse was again had to the quinine with renewed beneficial results. Since then there were two other slight relapses, attributable to over-exertion and exposure, and, as Dr. G. had reason to believe, in part to the omission of the quinine. His convalescence thus interrupted has even now not resulted in the establishment of full health, although more than ten weeks have elapsed since the attack commenced.

The third case, previously a fine healthy boy, aged seven years, was suddenly taken with chill on the morning of the 14th of Feb. ult. at the Mount Vernon Hotel of this city. His mother, an intelligent lady, gave him warm drinks, and made warm applications to his extremities. After reaction and fever, she applied cold to his head, and sinapisms to his feet and nape of neck, and gave him a table-spoonful of syrup of rhubarb. He passed a restless night, but in the morning was more comfortable. Towards the middle of the day he became worse, and at 2 P. M. had a slight attack of convulsions. When this subsided, he appeared to be in a dying state, and then Dr. G. was hastily summoned for the first time. His mother stated to Dr. G. that from the first he complained of intense pain of the head and limbs, that during the night he was delirious, and constantly called for drink. She gave him a second dose of rhubarb during the night, which had operated in the morning once. Dr. G. found him in a state of extreme prostration, the pulse could scarcely be felt, the skin was cold, pupils dilated, and the stupor was so profound that he could be roused with difficulty. There was a livid red spot on the upper lid of the left eye, about three lines in diameter, a larger one on the right cheek near the mouth, and quite a number of the same and smaller size on his buttocks and shoulders, and a few on his back and abdomen. None of these could be made to disappear by pressure. Gave him strong brandy and water in teaspoonful doses every few minutes, until egg-nog could be prepared, which was ordered to be given freely until reaction occurred. As there was great irritability of stomach, sinapisms were applied to the epigastrium, and also to the extremities. Sulphate of quinia in grs. iiss every half hour was prescribed, first in solution, but being rejected, it was given in the same dose in sugar-coated pills. Saw him again at 6½ P. M., and found great improvement. His pulse filled, and about 100 in the minute, his skin warm, and more elastic, his breathing fuller, stupor diminished, and intelligence improved. He had taken freely of the egg-nog, which, as well as the pills, was retained. Ordered the quinine to be continued, giving one pill every hour, and gave

cream and sol. of gum Arabic, instead of the egg-nog. He had two small evacuations from his bowels during the afternoon, produced by the syrup of rhubarb given the evening before. At 9½ o'clock found him very feverish, with increased action of the heart and arteries, jactitation, and delirium. Directed cold to his head, gum Arabic solution only for drink during the night, and to continue the quinine.

16*th*, 8 A. M. Spent a restless night, drank largely of the solution, and vomited several times. Had taken the pills regularly, but several were rejected after they were taken. Allowing for losses, Dr. G. supposed that at least forty grains of quinine were retained up to this period. Pulse 104; intelligence improved. Ordered elixir cinchona ℥ij, tr. opii acet. gtt. xxxij. S. A teaspoonful to be given every four hours. Quinine to be omitted, and nutritious diet to be given. Next day, 17th, his condition was decidedly more unfavourable. Pulse 130, delirium increased, great irritation about the head and face, so that he abraded the cuticle until the blood flowed freely. His head was thrown violently back by the contractions of the posterior cervical muscles, and his pupils were largely dilated. A blister was applied to the nape of the neck, and the quinine resumed in 2½ grain doses every two hours. This was followed by a gradual amelioration of all the symptoms from day to day, until now—sixteen days from the commencement of the attack—he may be said to be convalescent.

Dr. G.'s object, more particularly, in bringing these cases to the notice of the College, which he does merely from memory, is to show that, in his opinion, large doses of quinine have been the chief means in bringing these cases to a favourable termination, thus corroborating the experience of his friend Dr. Levick, as given to the College this evening. In confirmation of the value of stimulation and large doses of quinine he added that, when on a visit to Davenport, Iowa, last June, he was informed by Dr. J. M. Adler, who, in addition to an extensive general practice, has charge of the military hospitals there, that he had a number of cases of spotted fever during the latter part of last winter, and that he saved nearly all his cases after he adopted this treatment. In one case, that of his hospital steward, he gave ℥ss doses every half hour until ℥iij were taken, and although the case when he first saw it was one of the most unpromising he had seen, yet the patient recovered under this treatment. Several months ago, in consultation with Dr. Senderling, of Port Richmond, Dr. G. mentioned this treatment to him, and advised him to adopt it, as the disease was then prevailing there. On a recent occasion, Dr. S. informed him that he had taken the advice, and was convinced that it had been the means of saving several cases. Dr. G. stated that in his cases, whenever the quinine was omitted before the disease was entirely subdued, it returned, and could only be controlled by resuming the use of the quinia. This was particularly shown in his last two cases. In all there were present irritability of the stomach and torpor of the bowels. The spots appeared on the second day, and faded away at the end of the first week. In all there was evidence of more or less grave cerebro-spinal complication, and in no case was there any evidence of the disease spreading from contagion. Leeches in some cases and blisters were useful to nape of neck, but opiates increased the stupor and insensibility.

Dr. Stillé referred to a case which he had visited in consultation, and which did not prove fatal until the nineteenth day. In this case, the amelioration of the primary attack and an apparent convalescence appeared to be attributable to the administration of sulphate of quinia in full doses.

# REPORT

OF

# BUILDING COMMITTEE

OF THE

# COLLEGE OF PHYSICIANS.

**Appointed December 18, 1864.**

# REPORT.

THE Building Committee, in presenting their final report, conceive that it may not be uninteresting to give a brief sketch of the proceedings of the College which resulted in the erection of their new hall.

The wish to possess a building of their own for the use of the College was probably early entertained by the Fellows, but no measures for the attainment of that object seem to have been adopted before the year 1849. At the stated meeting on the 6th of November, of that year, the subject was brought before the College by a resolution introduced by Dr. Geo. Fox for the appointment of a committee of five to ascertain and report to the College the probable cost of a lot, and the sum necessary to erect thereon a building suitable for the accommodation of the College, and also to suggest such a plan as they might deem best adapted to raise the funds required for the purchase of such lot, and the erection thereon of a suitable building. The proposition met with general favour, and a committee was at once appointed, consisting of Drs. Geo. Fox, G. B. Wood, I. Hays, J. R. Paul, and C. D. Meigs.

This committee reported at the next meeting of the College (December 4, 1849), that the probable cost of a lot and building would be twenty thousand dollars, and that although they did not deem it expedient or practicable for the College at that time to involve itself in such an undertaking, they recommended a plan which they believed would ultimately secure the desired object. This plan consisted in the creation of a Building Fund, to which were to be appropriated certain securities then held by the College, and such contributions as might be from time to time made to it; the said fund to be vested in trustees who should hold the fund thus raised separate from other funds of the College; with the provision that the fund, with the interest arising therefrom and future contributions to it, should be devoted exclusively to the purchase of a lot of ground and the erection thereon of a building suitable for the accommodation of the College, but not to be so applied until the same should amount to the sum of twenty thousand dollars. The committee further recommended that a committee should be appointed to invite and receive contributions from

the Fellows to this fund; they likewise reported the form of a deed of trust to be executed by the College to the trustees.

These recommendations of the committee were all adopted by the College at its meeting on the 15th January, 1850; Drs. G. B. Wood, Geo. Fox, and J. Rodman Paul were elected trustees of the Building Fund, and the deed investing the Building Fund in these trustees was ordered to be at once executed. Drs. Geo. Fox, D. F. Condie, M. Stillé, F. West, and G. W. Norris were appointed a committee to invite and receive contributions from the Fellows to the Building Fund.

In the first annual report made by the trustees to the College, it is stated that the Building Fund, which was invested in various securities, was estimated, at the market value of these securities, at *six thousand dollars.*

The fund gradually increased by the interest on the investments, by further contributions, and by appropriations made to it from the surplus funds of the College.

In their annual reports the trustees stated the fund at the par value of the securities, to be as follows:—

| | |
|---|---|
| In 1852 . . . . . | $7,400 |
| " 1853 . . . . . | 11,295 |
| " 1854 . . . . . | 12,000 |
| " 1855 . . . . . | 15,400 |
| " 1856 . . . . . | 16,400 |
| " 1857 . . . . . | 18,600 |
| " 1858 . . . . . | 20,000 |
| " 1859 to somewhat exceed . . . . | 22,000 |

The sum for the attainment of which the trust had been created having thus been realized, the trustees reported the fact to the College, and requested that such action should be taken in reference to its appropriation to the purpose intended as might be deemed expedient by the Fellows. It was decided that the fund should further accumulate, and accordingly the trust was extended for five years.

It may be here stated that at a special meeting of the College, held on the 19th of June, 1856, a communication was presented from Dr. Mütter in which he offered to give to the College his collection of pathological specimens, with a certain sum, the interest on which was to be appropriated to their preservation and increase, and for other specified purposes, on certain conditions.

The proposition was favourably received, and a committee, consisting of Drs. Wood, Bache, Paul, Norris, Jewell, and Stillé, appointed to confer with Dr. Mütter on the subject. Several conferences took place, but satisfactory arrangements had not been agreed upon when the negotiation was abruptly terminated by a note from Dr. Mütter, dated September 25, 1856, in which he states, "I am too ill and too busy to give the proper

time and care to the arrangements between the College of Physicians and myself. All I can do is to leave the matter open until I return, which may be next spring."

In a note, dated October 27, 1858, Dr. Mütter offered to carry out the propositions made two years previously. His letter was laid before the College at its meeting on the 3d of November, and the committee formerly intrusted with the negotiation were reappointed with authority to complete the arrangements. At the meeting of the College on the 6th of December this committee reported articles of agreement between the College and Dr. Mütter, satisfactory to both parties. The agreement was approved by the College, and on the 5th January, 1859, the President and Secretary were authorized to sign, on behalf of the College, the articles of agreement as executed by Dr. Mütter, and the Secretary was directed to affix thereto the seal of the College. One of the articles of this agreement was, that the College should within five years erect a fire-proof building, containing an apartment of sufficient dimensions for the accommodation of the Museum and its probable increase.

Soon after this, some of the Fellows learned that an eligible lot might probably be obtained at a reasonable cost, and it was considered desirable that it should be secured; accordingly, on the 2d of March, on motion of Dr. Fox, a committee was appointed to select and purchase a lot suitable for the erection of a hall; and at the same meeting a committee was also appointed to solicit additional contributions to the Building Fund.

The committee on the purchase of a lot, which consisted of Drs. Fox, Wood, Norris, Paul, and Condie, reported on the 4th of May that they had purchased the lot at the N E. corner of Locust and 13th Streets, 42 feet on Locust Street, and 110 feet deep, for the sum of ten thousand five hundred dollars. The trustees of the Building Fund were accordingly directed to sell such securities in their hands as might be requisite to pay for the lot, and to hold the said lot for the purposes of their trust. The cost of the lot with incidental expenses amounted to $10,867 93.

This purchase was regarded as most judicious; the situation was excellent, the price very moderate, and the buildings on the lot were subject to rents which would yield the College about 7 per cent. on the investment. It was considered desirable that the College should possess also the lot to the east of the one purchased, but as the owner demanded what was deemed an extravagant price for it ($4,500), the committee declined making the purchase.

The committee to procure additional contributions to the Building Fund, consisting of Drs. West, Wm. Byrd Page, E. Hartshorne, Levick, S. W. Mitchell, T. H. Bache, and R. P. Thomas, entered upon their duties with activity and met with some success.

The trustees of the Building Fund in their annual report presented to

the College on the 4th of January, 1860, estimated the fund at that date in real estate at cost, and stocks at par value, as amounting to $24,373 14.

Towards the close of this year (1860), the political condition of the country gave rise to the belief that there would be but few buildings erected during the coming season, and that, therefore, this would be an appropriate time to make advantageous contracts for the erection of a new hall. Accordingly, at the meeting of the College on the 5th of Dec., on motion of Dr. Hays, a committee of five Fellows were appointed to procure plans and estimates for a hall; and Drs. Hays, Paul, E. Hartshorne, Norris, and Fox, were appointed this committee, to which Dr. F. Bache was afterwards added.

The trustees, in their annual report, presented on the 2d Jan., 1861, stated that the building fund invested in real estate at cost, and stocks at their par value, amounted to $26,712. It being believed, at this time, that the lot east of that owned by the College, could be purchased on more favourable terms than previously, the trustees were authorized to make the purchase if it could be effected for four thousand dollars. The lot was accordingly obtained for three thousand five hundred dollars, which was increased by the incidental expenses, to $3,540 67.

The College thus became possessed of a lot 60 feet on Locust St., by 110 feet to Canby St., with three fronts, in a most desirable location, and at a cost of only $14,408 60.

The committee appointed for the purpose, reported to the College on the 8th of May, 1861, a plan for a new hall, with estimates of the cost of construction. The consideration of the report was postponed until the stated meeting on Oct. (2d), at which time considerable opposition was manifested to proceeding with the project at the present time, first, as the funds were considered inadequate, and secondly, because, as it was urged, that no reliance could be placed on builders' estimates, and that the actual cost would be found to be double that estimated. Accordingly, after full discussion, the College, with its usual caution, decided that it was not expedient to take any measures forthwith for the erection of the new hall. The committee were, however, continued, and the plans and estimates were laid upon the table for examination by the Fellows, to be taken up at the call of the College, or on the appeal of the committee.

The project now became a frequent subject of conversation among the Fellows, and seemed to gain favour the more it was discussed. It was considered desirable that advantage should be taken of the then low price of materials and labour; and, besides, the College was deemed bound in honour to make every effort to fulfil the agreement entered into with Dr. Mütter, to erect within five years a fire-proof building for the reception of his museum. It was at this time suggested that the Fellows might sanction the erection of a portion of the hall, leaving the completion of it until funds for the purpose should be available. Accordingly, the com-

mittee had a second drawing made representing the southern portion of the hall, which was designed for the accommodation of the library of the College and the Mütter Museum, with the main entrance and stairway.

At an adjourned meeting of the College on the 18th Dec., 1861, the report of the committee was taken up for consideration; the plan for the new hall, drawn by Mr. Windrim, and approved by the committee, was adopted; and a Building Committee, consisting of Drs. Hays, E. Hartshorne, Norris, Bache, Wood, Fox, and Paul, was appointed, with instructions to invite proposals for the materials and labour necessary for the construction of that portion of the new hall represented in the second drawing, presented that evening.

The trustees of the Building Fund, in their annual report, Jan. 1, 1862, stated that the fund held in real estate amounted at cost, to $14,408 60, and in securities at par value $14,045 16, making a total of $28,453 76.

At the meeting of the College on the 5th Feb. (1862), the committee reported the estimated cost of the new hall made by responsible contractors, and submitted the subject to the judgment of the Fellows without offering any recommendation. The question was discussed, and its decision postponed until an adjourned meeting on the 19th of the month. At this meeting it was resolved, on motion of Dr. Hays, that the Building Committee be authorized to enter into a contract with a responsible builder for the erection of a portion of the hall according to the plan and specifications drawn up by Mr. Windrim, for a sum not exceeding thirteen thousand seven hundred dollars ($13,700). The committee was also authorized to engage the services of Mr. Jas. H. Windrim to superintend the building; and certain other resolutions were adopted, giving to the committee the powers necessary for the prosecution of the project.

Some of the Fellows were of opinion that the hall, in its incomplete condition, would present an appearance not creditable to the College, and proper representations having been made at a meeting on the 2d of April following, the Building Committee was authorized to contract for the completion of the exterior of the northern portion of the hall in accordance with the original plan, provided that the additional cost should not exceed seven thousand dollars ($7,000). The same committee were also authorized to invite additional contributions to the building fund.

The Building Committee, after examining the proposals made by several trustworthy builders, concluded to accept the offer of Mr. M. Errickson to construct the southern portion of the hall completely for the sum of thirteen thousand seven hundred dollars ($13,700), and to build the exterior of the remaining portion for the sum of six thousand eight hundred and seventy-four dollars ($6,874). But before concluding the contract, the committee sought an interview with Mr. Milliken, of the Phœnix Iron Co., who made the very liberal offer on behalf of the Co., to deduct

five per cent. from the regular price of the iron beams, and if the bill for the same should amount to three thousand dollars, then to make a donation to the building fund of two hundred dollars, provided that the College would make the contract for the beams directly with the Co., and would pay cash on their delivery.

The committee believing that, by adopting this course, the College would be benefited to the extent of nearly one thousand dollars, proposed to Mr. Errickson to supply the iron beams, and to deduct from the sum demanded by him in his proposals, the *estimated* cost of those beams, four thousand four hundred and eight dollars ($4,408). This he at once acceded to, and contracts were drawn up and signed, the first contract for the erection of the southern portion of the hall complete for the sum of ten thousand seven hundred and fifty-seven dollars; the second for the building of the exterior of the remaining portion for the sum of five thousand seven hundred and nine dollars.

| | |
|---|---|
| The proposals were for 1st contract | $13,700 00 |
| " " 2d do. | 6,874 00 |
| Making | $20,574 00 |
| The contracts as made were 1st contract | 10,757 00 |
| " " 2d do. | 5,409 00 |
| Making | $16,166 00 |
| Estimated cost of iron beams | 4,408 00 |
| | $20,574 00 |
| Estimated cost of iron beams | $4,408 00 |
| Actual cost in consequence of deduction | 3,619 14 |
| Being a saving of | 738 86 |
| Add to this, donation from Phœnix Iron Co. | 200 00 |
| Actual gain by the College | $988 86 |

This gain was somewhat reduced, as already reported to the College (March 4th, 1863), by the cost of some improvements in the details of the plan made during the progress of construction; nevertheless, it is gratifying to the committee to be able to state that the hall was built at a cost of at least four hundred and fifty dollars ($450) less than the estimate.

The committee did not neglect the duty assigned to them, of inviting subscriptions to the Building Fund, and succeeded in collecting, by the close of the year, three thousand five hundred dollars ($3,500).

The College determined, Nov. 5th, 1862, to have some improvements made in the immediate vicinity of the hall; they accordingly instructed the committee to have an iron railing placed along the south and east fronts for the protection of the building, to have the passage ways curbed

and paved, the side of the buildings at the east of the hall to be rough cast, &c.

The cost of these improvements was as follows:—

| | |
|---|---|
| Iron railing | $700 00 |
| Curbing | 284 50 |
| Paving | 275 00 |
| Relaying gutters, and repairs | 30 00 |
| Plastering eastern houses | 75 00 |
| Scrapers | 8 00 |
| | $1,372 50 |

The building fund having been previously nearly exhausted, the College decided, March 4, 1863, to raise five thousand dollars, at 5 per cent. on mortgage of the hall; so much as necessary of this sum to be appropriated to paying for the above mentioned improvements, and the balance to completing the interior of the northern portion of the hall, and for furnishing the apartments designed for the special use of the College. The completion of the janitor's apartments and of the lecture-room was deemed desirable, as it was important that a janitor should reside in the building for its better protection, and it was supposed some revenue might be derived from letting the lecture-room. Bookcases were also needed for the library.

The cost of these improvements was as follows:—

| | |
|---|---|
| Completing lecture-room and janitor's apartments | $2,500 00 |
| Brick closet with iron door for safe keeping of records of College | 125 00 |
| Bookcases | 687 29 |
| Gas fixtures | 235 00 |
| | $3,547 29 |
| Cost of improvements previously mentioned | 1,372 50 |
| | $4,919 79 |

The funds appropriated to the committee are thus exhausted. Nothing remains, however, at present to be done except the furnishing of the library rooms with carpets, chairs, and tables; and the lecture-room with settees and a rostrum. The committee would respectfully urge upon the Fellows the importance of accomplishing this. They are persuaded that were the library rooms comfortably furnished, and were they lighted up on one evening in the week for conversation meetings, to which members of our profession on a visit to the city might be invited, and an opportunity afforded to the Fellows to consult the books and periodicals, that professional brotherhood would be strengthened, our profession elevated, and the great objects of our association materially promoted.

The committee cannot refrain from congratulating the College on its

now possessing a building, erected in the best and most substantial manner, completely fire-proof, very spacious, and having all the conveniences which can be desired for its own purposes, and affording ample accommodations for the Mütter Museum with its probable increase, thus completely fulfilling its engagement with the late Dr. Mütter.

The College likewise possesses a very large library, which is rapidly increasing, and which, there is every reason to believe, will ere long be one of the most extensive and valuable medical libraries in this country.

The Mütter Museum of the College, with its present nucleus of Pathological specimens, and the funds appropriated for its preservation and increase, must annually become more valuable, and afford important facilities to students in the acquisition of a knowledge of surgical and medical pathology, and tend to the advancement of our science.

The following statement of the cost of their new hall may not be uninteresting to the Fellows:—

| | |
|---|---|
| Cost of lot . . . . . | $14,408 |
| Building, including superintendence, iron railing, paving, &c. . | 25,250 |
| Furniture, including book-cases, gas fixtures, &c., about . . | 1,100 |
| Total . . . . . | $40,858 |

If to this sum be added the value of the library, which cannot be considered as less than fifteen thousand dollars, and that of the museum with its endowment of thirty thousand dollars, amounting in all to nearly one hundred thousand dollars, it must be manifest that we have reason to be proud of what the profession of our city has done for the promotion of our science, the improvement of the healing art, and the relief of human suffering. And this has nearly all been accomplished by the contributions from our hard worked and inadequately compensated profession; the whole sum furnished from other sources amounting to only about twenty-five hundred dollars.

We are gratified also to be able to state that this great enterprise has been achieved without involving the College in any debt except the mortgage for five thousand dollars.

It is further a subject of congratulation that the College resolved to commence the erection of their hall at so propitious a period, for the cost of materials and labour soon afterwards commenced to advance, and at the present time the building could not be erected for less than double its actual cost.

It may not be out of place for the committee to call the attention of the College to the fact that its expenses will in future be largely increased by the taxes upon its property, and by the cost of fuel, lights, attendance, &c., all which will be a heavy drain on the resources of the College. Other associations, whose objects are not more philanthropic and beneficent than ours, have their property exempted from taxation, and some of them have

been the recipients of legislative and private bounty. The committee conceive that we have a just claim on the State for at least a release from taxation, and they submit this subject to the consideration of the Fellows.

The committee cannot close their report without noticing the interest displayed by the architect, Mr. Jas. H. Windrim, and the contractor, Mr. Michael Errickson, in the erection of our Hall, and the vigilant attention which they have given to their duties. The sub-contractors have likewise, with but two exceptions, executed their work to the entire satisfaction of the committee, and several of them have even furnished liberal contributions.

The liberality of the Phœnix Iron Company has already been mentioned.

Messrs. Wood & Perot have not only executed their part (the erection of the iron stairway and the iron railing in front) in the best manner, but they furnished iron lamp posts at the front door, an iron gate at the north-east corner of the building, and also bronzed the stairway without charge.

Messrs. Wright, Hunter & Co. furnished a wash pave; and Messrs. Cornelius & Baker made a deduction of thirty-five dollars from their bill.

Our architect and superintendent, Mr. Windrim, has faithfully performed his duties for a very small compensation; but our Hall, with its excellent proportions and arrangements, will stand a monument of his ability in his profession.

With this the committee hand over their minute book, containing the record of their proceedings, the contracts for the erection of the Hall, receipts for payments, releases of liens, and other documents.

The committee having now fulfilled the object of their appointment, would ask to be discharged.

ISAAC HAYS,
GEO. W. NORRIS,
GEO. B. WOOD,
GEO. FOX,
EDWARD HARTSHORNE,
JNO. RODMAN PAUL,
FRANKLIN BACHE.

Philadelphia, February 2d, 1864.

# SUMMARY OF THE TRANSACTIONS

OF THE

# COLLEGE OF PHYSICIANS OF PHILADELPHIA.

FROM JUNE 1, 1864, TO FEBRUARY 1, 1865, INCLUSIVE.

1864. *June* 1. *On the Proper Designation of the Present Epidemic. (Cerebro-Spinal Meningitis.)*—Dr. ALFRED STILLÉ read the following remarks on this subject:—

The different and opposing views which have been taken by Fellows of the College respecting the nature and the appropriate name of the fatal epidemic which has prevailed in this city, and in various other localities, induce me to attempt a more exact determination of both than I was able to do in the few verbal remarks which I made at a former meeting, when reporting a case of the disease which had fallen under my observation.

The scientific nomenclature of diseases is apt to reflect the dominant pathological ideas of the time, while their popular appellations are still more generally derived from the salient symptoms which characterize them. The latter are therefore more constant, in general, than the former. But, as pathological science advances, there is a slow and gradual, but still an uninterrupted, tendency to replace popular by scientific names—names which express the essential constitution of diseases, and their relation, therefore, to others which partake more or less of the same nature, and require, in a greater or less degree, the same methods of treatment. When, therefore, a disease is met with which at first appears to be unlike others, it is natural and proper provisionally to distinguish it by a name representing its most striking and constant phenomenon; but as soon as its nature is determined, and its analogies established, it is equally natural and proper to bestow upon it a title which shall express its affiliation with affections already belonging to the nosological family. Thus, "black tongue" becomes "epidemic erysipelas;" "black leg" is found to be a form of "scurvy;" "summer complaint" is "cholera infantum;" "child-crowing" is "laryngismus stridulus;" and scores, or even hundreds, of similar examples might be cited, if they would not readily occur to every educated physician.

There are diseases *totius substantiæ*, which, from the rapidity with which they invade the whole economy, are concluded, upon good grounds, to originate in the blood, and which more or less confine their effects to functional disorders generated by a vitiated condition of the circulating fluid. There are others which, originating in the same manner, occasion certain special lesions of the solids. There are others, again, which commence by local disorders, and in their progress implicate the whole organism in a greater or less degree. For the last mentioned, a title expressive of their local origin is universally admitted to be appropriate. For the second, it is usual to select a name which shall denote their double characteristic of being a general disease with a specific anatomical character. But in the case of diseases without anatomical localization, a term expressive of their charac-

teristic symptomatic expression forms the nearest approach to an accurate designation.

Typhus fever belongs to the last category. It is the peculiar product of a vitiated state of the blood, the child of famine and decay—of causes, in a word, which tend to prevent the proper renewal of the organic elements of the body, and to cause their retention within the economy as effete organic, and therefore poisonous, matters. It occasions no local lesion, but affects the totality of the organs upon whose action, according to a certain manner, life depends. The name, therefore, which it most appropriately bears, denotes its most characteristic phenomenon, the typhous quality of all its symptoms.

Typhoid fever includes other elements. In addition to a greater or less degree of those which belong to typhus, it presents symptoms of intestinal disease, and corresponding lesions. At one time, it will be remembered, these lesions were held to be the source of the local and general phenomena of the disease, and it was consequently termed entero-mesenteritis. But further observation showed that a fatal termination of an attack might occur before any ulceration of Peyer's glands had taken place, and consequently that this ulceration was a consequence of the essential morbid process of the disease, and not its effect. The theory that the symptoms, as a whole, originated in the intestinal lesion could no longer be supported; and more attention having been directed to the *quality* of the symptoms themselves, which were evidently typhoidal and febrile, the affection acquired the name of typhoid fever. But this step was towards the opposite extreme, for the new name had no reference to the anatomical character of the disease, the alteration of the mesenteric and intestinal glands. A further modification of the nomenclature was therefore demanded. As all my hearers know very well, Dr. Wood proposed the term enteric fever, and its general adoption at home and abroad proves that it expresses better than any former denomination the peculiar double character of the disease. That it is open to criticism, I presume its distinguished author will concede; but it is very certain that it possesses in a high degree the merit of describing the affection to which it is applied—its essential lesion and its prominent symptom. In this, as in all diseases which present a definite anatomical character, the lesion represents the body, or material element of the disease, while the predominant symptom typifies its immaterial and vital manifestation. The two together constitute the most perfect image we can conceive of the disease in its totality.

These remarks will serve to illustrate the principles upon which I think the epidemic disease of the winters of 1863 and 1864 should be named. If it possesses a distinct anatomical character, let that be the ground of its title; if it does not present such a lesion, but, in its stead, a constant symptom, let that symptom confer its name upon the affection. Or if any lesion and symptom can be found in constant union, let them jointly be used to designate it.

A year ago a paper was read, by a Fellow of the College, in which it was stated that the disease was unknown in Europe; that the only account of it to be found is an imperfect description given of it by a number of physicians of New England, between 1807 and 1816; that "Dr. Gallup gave the name of spotted fever to it;" and that "this designation should be retained, inasmuch as it is drawn from one of the most characteristic symptoms of a disorder which offers no peculiar anatomical lesions." I feel very doubtful whether my excellent friend, the author of that paper, would now repeat the statements which he then made, evidently without

having consulted the most important original histories of the New England epidemics, and when, as the disease was entirely novel to himself, his knowledge of it had not been thoroughly matured. I propose, by a reference to the published records of its history, to show, 1st, that the disease is not correctly named *spotted fever;* and 2d, that its proper title is *epidemic meningitis*, or, if it be preferred, *cerebro-spinal meningitis*. An enumeration of proofs may not present the interest of a discussion in which affirmative and negative arguments are debated, but, where the question to be decided relates to opinions which have passed into judgments, it is perhaps the shortest and most conclusive method. I shall proceed, then, first, to show by citations from authors who wrote upon the first epidemic in the United States, that they either testify directly against the application of the term "spotted fever" to this disease, or else show that spots were neither an invariable, nor, in some epidemics, even a frequent symptom.

Dr. Nathan Strong, Jr., says "these spots, which in 1806–7 marked almost every case, in 1808–9 were rarely observed." The spots, he also remarks, "gave rise to the name *petechial* or *spotted fever, which has been very generally, though very improperly, applied to the disease.*"

Dr. North, referring to petechiæ, remarks: "This symptom does not occur so often as the name which this disease has obtained would lead one to expect. . . . They are by no means a constant or a frequent symptom." (p. 129.) Dr. Lyman, after describing the mulberry rash, petechiæ, and vibices, adds: "There are, however, some, even among the fatal cases, without any such appearances on the skin." Dr. Woodward, describing a second occurrence of the epidemic, remarks: "An eruption on the skin so seldom appeared, that it could no longer be considered a characteristic symptom of the disease." In the report of Drs. Haskell, Spooner, and Holmes it is stated: "But neither the spots nor the eruptions are inseparably connected with this disease." Dr. Fiske says: "An eruption, which the name of this disease seems to imply, is not a constant attendant upon it." Dr. Arnell testifies that the spots "are not always a constant attendant upon the disease." All of this testimony is contained in the valuable little volume published by Dr. North in 1811.

An earlier treatise, although first published in 1813, is the report to the Massachusetts Medical Society, by a committee consisting of physicians no less eminent than Thomas Welsh, James Jackson, and John C. Warren. They devote a section of their report to discussing "the name and character of the disease," and introduce it with the following words: "This disease has been called spotted or petechial fever. The name has been considered improper by most medical men who have had occasion to remark upon the subject." Among their conclusions from the discussion is this one: "In a very considerable proportion of cases there are not discovered either spots or eruptions. Indeed, if we except some slight appearances on the inside of the elbow-joint, and in similar places, which very probably are to be attributed to sweating, *such spots and eruptions are comparatively rare.*" (p. 158.) In their description of the symptoms of the affection, they also say: "It is not easy to determine in how large a proportion of subjects the skin is affected with spots and eruptions. Under the observations of some gentlemen they have been very rare. One remarks that in eighty cases, among which twenty were very severe, he had seen only four instances in which spots or eruptions of any kind had taken place; and he adds that these had not been the worst cases under his care." (p. 132.)

A scarcely less meritorious paper is entitled "Remarks on the Spotted

Fever, as it prevailed in Hartford, Conn., in the Year 1809. By Dr. Henry Fish." It is equally emphatic regarding the inconstancy of the symptom. "Petechiæ, or livid spots, from which spotted fever has derived its name, *did not occur in one case of this epidemic* before death; after it, they were noticed in several." (p. 32.)

A writer in the *New England Journal*, for 1814, has the following remarks: "Considerable misapprehension has arisen from the very name of 'spotted fever;' for though the word *spotted* is a fair equivalent to the word *petechial*, . . . yet spots of a nature to *attract notice* are often wanting in *five cases out of six*, and sometimes in a larger proportion. Hence well-informed practitioners of all descriptions are dissatisfied with the name." (p. 167.) Dr. Gallup, so far from having given this name to the disease, and writing after it had become familiar, says distinctly: "The eruption, which has given a name to this disease, is not a constant attendant. . . . The proportion of cases which had distinct eruptions may be estimated at one-sixth." (p. 232.) Unless upon the etymological principle *in lucus a non lucendo*, it is difficult to comprehend the propriety of calling a disease *spotted fever* which, in a large proportion of cases, presents no spots at all, and which, furthermore, is less a fever than an inflammation, as I shall endeavour presently to demonstrate. The citations which have been made suffice to prove that they who had the best opportunities for witnessing the earlier ravages of the disease in this country, and of becoming acquainted with all its phases, pronounced "spotted fever" a misnomer. It is not less so now than it was half a century ago.

Many years passed away and no return of the epidemic was recorded. Meanwhile, thanks to the publications of Dr. Gerhard and other physicians, the two great idiopathic fevers were distinguished from one another, and established as the only two continued fevers of a grave type occurring in northern latitudes. Meanwhile, too, pathological anatomy became more generally cultivated, and the spinal marrow, whose functions had been previously ignored or unknown, was admitted to be an organ, and not a subordinate one either, but an organ to which the brain itself is, after all, a mere appendage. From 1842 to 1850 the disease we are considering prevailed in the southwestern States. It was there carefully studied by not a few physicians, and although, "in numerous instances," "petechiæ and ecchymoses" were observed, and also "an eruption resembling nettle rash," and "an efflorescence not unlike that of scarlatina," no one appears to have called it "spotted fever."

Finally, the disease having again made its appearance for a short time in Massachusetts and New York in 1850–51, the present epidemic took its rise in the western and central parts of the last named State in 1857, and has since travelled chiefly in a southwardly direction as far, at least, as North Carolina. In this extensive and disastrous progress it has been carefully watched by a large number of physicians, and, so far as I can learn, none have described it as "spotted fever" in any published writing, except Dr. Gerhard, with some other physicians of this city, and Surgeon Wales, U. S. N., stationed at Newport, R. I.

From these notices, although very brief, it must, I think, be concluded that spots of no description, petechial, rubeolous, roseolous, or other can be regarded as characteristic of the disease, and that consequently a name derived from so inconstant a symptom must be regarded as inappropriate. As for the particular name which it is sought to attach to this affection, it is already appropriated by another in which the spots really are a charac-

teristic symptom. I refer to typhus fever, a spotted fever in the true and literal sense of the term, and which more than a century ago received that name in England from several of its historians. In Germany, also, it was known by a title which means exactly *spotted fever* (Flecken Fieber). Petechial and ecchymotic spots do not belong essentially and exclusively to any disease, but to a particular condition of the blood, and perhaps of the solids also, which may be present in almost every affection involving the whole system, as in typhoid fever, the eruptive fevers, yellow fever, scurvy, purpura, and many others. The disease which we are considering would be singular indeed if it ran so remarkable a course and presented such peculiar symptoms as it usually does, without possessing some element better fitted to giving it a name than an eruption which does not exist in half the cases. I proceed, therefore, to inquire what symptoms and what lesions characterize it so frequently as to entitle them to confer a name upon it, and I again resort to the historical documents which have been already cited, requesting particular attention to the fact that at the very time when the disease continued to be called "spotted fever" for convenience sake, its scientific position as a cerebro-spinal meningitis was perfectly well understood.

Dr. North mentions "among the more unusual symptoms of the fever," a "dilatation, and in some a contraction of the pupils of the eyes; blindness in some, in others double or treble vision; a drawing back of the head, with *a kind of clonic spasm of the muscles of the neck.*" President Fitch speaks of "pain and rigidity of the muscles of the neck often, and *the head is in many instances inclined backwards.*" Dr. Woodward, also, describes "*the head drawn back with spasm.*" In the Report to the Massachusetts Medical Society before alluded to, the following symptoms are particularly noticed: "Numbness or total insensibility and paralysis in a larger or smaller portion of the body, which occur often in the first stage of the disease, and continue through its whole course, and even after other symptoms have subsided; . . . and spasms which frequently occur, and shift suddenly in the same manner as the pain does from part to part; sometimes resembling hysteric spasms, *sometimes occasioning the head to be drawn back as in opisthotonos.*" Dr. Fish, of Hartford, describes anæsthesia and paralysis of various parts, blindness, loss of the sense of taste, spasmodic deglutition and paralysis of the pharynx. Dr. Gallup says, "Convulsions or spasms sometimes usher in the disease. That form of tetanus called opisthotonos comes on sometimes towards the close of severe cases; it denotes an alarming case, but is not a fatal symptom."

Finally, Dr. Miner, describing a case which occurred in 1816, uses the following language: "He was as stupid as a block, unconscious of any impression on either of the senses, and so convulsed that it required three or four men to hold him on his bed. His eyes were open, and rolled back, so as to hide the coloured part, *and his teeth were as firmly clenched as in locked-jaw.*" It is added: "His face, arms, legs, and body were literally covered with spots," &c. In his remarks upon this case, Dr. Miner says: "*Spotted fever appears to have its seat and throne in the brain*, to belong nosologically to the passive Phlegmasiæ."

It is evident, therefore, that long before the affection ceased to be called "spotted fever," those of its symptoms which denote serious disease of the central organs of the nervous system had been observed, described, and properly appreciated. It is of course unnecessary to cite in detail analogous illustrations after it had been recognized as a meningitis. Dr. Drake has

furnished material for this in the chapter of his work on *The Principal Diseases of the Interior Valley of North America*, which treats of "epidemic cerebro-spinal meningitis" as it prevailed in that region from 1842 to 1850.[1] All the reporters of the existing epidemic have described the same characteristic nervous and spasmodic phenomena (paralysis and opisthotonos), as occurring more or less frequently, and in a greater or less degree, with the single exception of my friend who first presented an account of the disease to this college. Even Surg. Wales, while reporting the Newport epidemic as "spotted fever," does not fail to point out the special implication of the nervous centres, by saying, "The limbs seem paralyzed and are numb, and in some cases even insensible; there is deafness, dimness of sight, or even complete loss of vision. A few have convulsions and opisthotonos." There is, then, no doubt that among the symptoms of the present epidemic, those which characterize meningitis, especially of the base of the brain and of the spinal marrow, were prominent.

Finally, let us inquire what lesions of the nervous centres are found after death from this disease, and in what relation they stand to the symptoms which have been described. The earliest record upon the subject is that of Danielson and Mann in 1806, who, in two out of five dissections, found adhesions of the cerebral membranes, or "a fluid resembling pus, both over the cerebrum and the cerebellum." In these cases the encephalic veins were "turgid with blood," as they also were in the three other cases which were regarded as not presenting evidences of inflammation. But the Report of Drs. Welsh, Jackson, and Warren leaves little to be desired so far as the lesions of the brain are concerned. They describe the copious discharge of blood from the turgid veins of the dura mater when this membrane is incised, and the equally profuse flow of reddish serum from the cavity of the arachnoid. And they, moreover, make a very important distinction between the appearances in two classes of cases; in those, namely, which are fatal within the space of twelve hours from the invasion, and those which perish at a later period; in the former there is only excessive congestion of the large bloodvessels, but in the latter there are other lesions which, they say, "are more conspicuous in proportion to the duration of the disease." "The tunica arachnoides," they proceed to observe, "and the pia mater are remarkably altered in appearance by the effusion of an opaque substance between them, which may be called coagulated lymph, or semi-purulent lymph. This substance is frequently of the yellowish colour of pus, with a consistence between the tenacity of lymph and the fluidity of pus. At other times we see it possessed of the aspect of well characterized lymph. . . .

[1] It is proper, also, to direct attention to the history of an epidemic of cerebro-spinal meningitis which occurred in 1849 in the towns of Milbury and Sutton, Mass., and which was described as such by Dr. Joseph Sargent, of Worcester. After relating a number of cases, all of which presented marked cerebro-spinal symptoms, and a number of them a petechial eruption, and after comparing the epidemic he had witnessed with that of 1810 to 1814, Dr. Sargent remarks: "The *spots* play but a very subordinate part in all the histories of the epidemic of thirty years ago, that I have seen, and were by no means constant. They gave the name to the epidemic *only because its lesion was not known, and the name was picturesque.* The name also made, perhaps, a part of its terror, and designated a kind of personification. So natural is the superstition which takes fright at severe disease which is 'unknown;' and which also loses half its horror of the same disease when the knife of the anatomist has fixed its locality, even though this do not diminish its danger—a tacit recognition of confidence in science and medical skill." —(*Am. Jour. of Med. Sci.*, July, 1849, p. 40.)

The membranes at the basis present the same appearances as at the vertex of the brain." In another place (p. 159), they say that in severe cases of the disease there is *always* inflammation within the cranium. This extract is sufficient, I presume, to prove beyond doubt or cavil that the "spotted fever" of 1809 was a meningitis. Had the spinal marrow at that time arrived at the dignity of being considered an organ, it would doubtless have been examined. As it was, the condition of this nervous centre remained unknown until the recurrence of the epidemic between 1840 and 1850. The pathological anatomy of the disease was at that time studied very carefully by Dr. Ames, of Montgomery, Ala., and so far as appears, by him alone. It would occupy too much time to quote his very interesting description of the lesions which he found; suffice it to say that, as regards the brain, they were the same precisely as had been observed in Massachusetts thirty years before. To this, however, it is added: "So far as the spinal cord was examined, the lesions, generally speaking, were the same as those met with in the brain in the same cases. The intense vascularity of the pia mater was always present, but the lympho-purulent deposit and the injection of the cord proper were less common than in the brain. The spine was opened in its whole length in one case only." In this case, however, the dura mater is stated to have been thickened, its arachnoid lining divested of its polish; the cervical portions of the cord softened, especially in the white substance, while the converse condition prevailed in the lumbar portion, where more of the gray substance was altered. "A deposit of lympho-purulent matter was found chiefly about the roots of the anterior spinal nerves."

If we come now to the existing epidemic, the testimony is invariably the same wherever dissections have been made. Thus in 1858, at Churchill, N. Y., the post-mortem appearances were observed by Dr. Craig in no less than six cases which proved fatal in less than forty-eight hours from the commencement of the attack: "In all of them, on removing the calvarium, there was observed a turgid condition of the venous system. On removing the coverings of the brain, lymph of a yellowish and greenish hue was detected in the upper sulci of that organ; and in all there were increased quantities of lymph with sero-purulent effusion at the base of the brain and extending down the whole length of the spinal cord. The choroid plexus was also very much engorged, and more or less serous effusion in the ventricles. We also found softening of the base of the brain and upper portions of the spinal cord."

The most complete history of the anatomical characters of the existing epidemic is contained in the Hospital Notes and Memoranda of Dr. J. Baxter Upham, Surgeon in charge of Stanley General Hospital at Newbern, N. C. He dwells, as did the original reporters of the New England epidemic, upon the different grades of the alteration according to the duration of the attack. When death took place within two or three days there were opalescence of the pia mater, increased vascularity of the membranes of the brain and spinal cord, a large effusion of serum mixed with flocculi of lymph, and "an exudation of thick, yellowish, apparently semi-organized lymph on the base of the brain and the medulla oblongata." When the attack had been of one or more weeks' duration, "the deposits on the brain were usually more marked, predominating at its base, around the pons Varolii and in the sulci of the cerebrum and cerebellum, covering the surface of the oblongata, and extending down to the spinal cord, sheathing it, in some cases, throughout its entire length." It is unnecessary to quote more of Dr. Upham's accurate and interesting description. It is enough that what

has been read corroborates all the previous histories of the anatomical lesions of the disease, and tallies in every point with the original account of them furnished by the Committee of the Massachusetts Medical Society.

I conclude, therefore, that the description of the disease given by the physicians of New England between 1807 and 1816 was not an imperfect one; that the name of *spotted fever* was not conferred upon it by Dr. Gallup; that this designation should not be retained, inasmuch as spots are not the most characteristic symptom of the affection; and, finally, that it does offer a peculiar anatomical lesion which entitles it to be designated as *meningitis* with the prefix *epidemic* or *typhoid*, as it has been called in Europe by the best authorities ever since its pathological anatomy was investigated and its type understood.

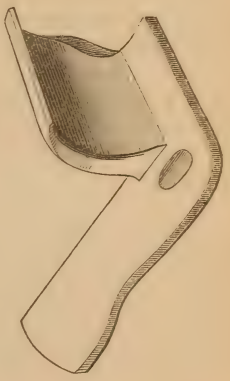
1864. *June* 1. *Spotted Fever.*—Dr. D. Gilbert said that among the cases reported by him to the college, at the meeting in March last, there was one of a boy, aged seven years (see number of this Journal for July, 1864, p. 141), who was attacked about three weeks previously, and had progressed favourably under the use of large doses of quinia and stimulants. This case continued to do well, and about the 1st of April became convalescent, so that on the 10th he ceased attending him. He was again summoned on the evening of the 20th of April, when he found the patient totally insensible, with pupils dilated, pulse small and frequent, &c. On inquiry he learned that the boy had not had any alvine evacuation for the last three or four days, and that on that day he had eaten an unusually large quantity of indigestible food. Everything possible was done to relieve the brain, procure discharges from the alimentary canal, and sustain the system, but in vain. He died on the next morning. Dr. G. stated that on the 6th of March last he was called to another well characterized case of this peculiar disease, in the person of a lady, aged about twenty-five years, residing in Stiles Street. The eruption appeared on the second day. Without entering into a full account of the case, he said that his object was merely to bring it before the college as additional proof of the value of quinia in large doses in the treatment of this malady. He gave this patient four grains every hour until ʒj was taken, then the same quantity every two hours for a day or two, and finally every four hours, keeping her thus fully cinchonized until after the tenth day, when convalescence commenced. This patient recovered fully in about three weeks. Dr. Stillé saw the case, at Dr. G.'s request, on the fifth day.

*Oct.* 5. *Splint for Fractures of the Lower part of the Humerus.*

Dr. Packard exhibited a splint employed by him with advantage in cases of fracture of the humerus, especially when the lesion is seated at or below the middle of the bone.

For many years it was the custom in this city to use the external and internal angular splints devised by Dr. Physick for cases of this kind. Not very long ago, however, there was substituted for these (by whom I have been unable to ascertain) a single angular splint, hollowed out so as to fit the anterior surface of the arm, forearm, and hand; the hand being of course kept in a state of supination. In many cases this splint answered an excellent purpose, especially when there was used in addition to it a posterior pasteboard case for the lower part of the arm. But the supine position of the hand is not comfortable when long kept up, and the want of lateral support at the seat of injury sometimes gave rise to angular deformity.

It therefore occurred to me to add to the inside angular splint a piece shaped like the arm-part of the anterior angular splint, and this is the simple principle of the splint I now exhibit. The thick inner edge of the hollowed anterior part is fastened by nails to the edge of the upper portion of the inside splint. Its lower edge is carefully cut away, rounded, and smoothed to fit across the bend of the elbow. Its upper edge is pared down internally so as to form with that of the inside splint a line corresponding to the shape of the anterior wall of the axilla. It is upon the correctness of these lines above and below that the accuracy of the fit of the whole splint depends, and hence also its comfort and efficiency.



The annexed sketch will serve to illustrate still further the explanation now given, although the part for the anterior face of the arm is represented very much too wide. I am in the habit of having the splint made upon a rather large measurement, cutting it down to fit each special case. Several times I have had it made by carpenters entirely unused to splint making, but have had no difficulty in giving them the idea.

The patient's comfort is further promoted by cutting away the under edge of the forearm part of the splint so as to allow the hand to be somewhat abducted, as in Bond's splint. The hollow at *c* for the inner condyle is important in this as in all the other internal angular splints. Should the condyle be very prominent, or the arm very thin, it is better to make a hole here, rounding its edges very carefully.

*Dec. 7. Death from Hemorrhage caused by a Sharp Sequestrum cutting the Popliteal Artery.* Dr. Hunt reported the following case :—

J. P., aged 19, was admitted to the Pennsylvania Hospital Nov. 9, 1864, after an alarming hemorrhage, which came through sinuses communicating with dead bone in the popliteal space. His countenance was pale and anxious, pulse frequent, quick, and small, tongue glazed, dry, and aphthous, respiration hurried, bowels costive, and abdomen meteoric. He had slight delirium at night, and constant jactitation. Old sinuses and cicatrices pointed to necrosis, the origin of which was uncertain, but was supposed to have been first caused by a fall on the ice in the winter of 1861–2. As there was no bleeding at the time of admission, the full extent of the necrosis was not ascertained, as a thorough exploration would have endangered a return of the hemorrhage. Perfect rest, nourishing food, persulphate of iron, and chlorate of potash were prescribed. A bandage was applied to the limb, which had become œdematous, and it was also elevated. At this time slight pulsation could be detected in the tibial arteries. On consultation it was determined that if the hemorrhage returned to etherize the patient, open the wound, and amputate or ligate, according to the results of the exploration. The patient's comfort was greatly improved, but his general condition cannot be said to have responded to the treatment. The condition of hydræmia into which he was thrown from the great loss of blood before entering the hospital, gave very poor hopes of recovery.

A drop of his blood on a glass slide, spread over a much greater space and coagulated in much wider meshes than healthy blood.

Under the microscope there was a marked diminution of red and an increase of white corpuseles. On Sunday, Nov. 20th, an alarming hemorrhage commenced, but it was promptly checked by compresses and the tourniquet. From this time pulsation in the tibial vessels entirely ceased. The patient was so weak as to forbid operation when the attending surgeon arrived.

On Tuesday following, about three ounces of blood were lost, after which the patient gradually sank and died on Wednesday night. The whole amount of blood lost, while in the hospital, did not exceed six or eight fluid ounces.

*Autopsy.*—No examination of the viscera permitted. The connective tissue around the wound was infiltrated with serum and lymph. The muscular interspaces were filled with decomposing blood, and broken down tissues, including those of the nerves and bloodvessels, which were involved in the general pulpy mass. An external sinus communicated directly with the femur, which was partly denuded, and on the posterior surface of which was a large cloaca with thickened and rounded edges; from this there projected inwards and downwards a very sharp *movable sequestrum*, which was three inches in length, and which compressed and finally cut across the main artery directly after its passage through the great adductor tendon. The medullary cavity was obliterated for the space of two inches above the seat of disease. The specimen is in the museum of the College of Physicians.

*On the Use of the Sulphite of Soda in the Treatment of Erysipelas.*

Dr. Addinell Hewson stated that he had been using the solution of sulphite of soda as a local application in erysipelas since February, 1864, and had obtained results from it in the various forms of that disease which were to him both interesting and surprising. He had been induced to try it from the representations made by Prof. Polli of its influence in destroying all disease of a cryptogamic or animalcular origin—a source to which recent researches would lead us to suppose erysipelas was due. At first he administered it internally, in doses of ten grains every two hours, as well as applied it locally, but the effects of the local use were so prompt and decided that he has now abandoned its internal use altogether as unnecessary. In extensive trials of this remedy, both in hospital and private practice, he has never seen it fail when thoroughly applied before the deep planes of cellular tissue had been invaded by the disease. Under the latter circumstance no positive curative results were of course to be expected from its mere external use. But before such parts had become affected a solution of ten grains of this salt to the ounce of water when thoroughly applied on lint all over the surface affected and to a considerable distance beyond it and covered with oiled silk to prevent the evaporation of the solution, had not only produced a decided bleaching effect on the discoloured surface in every such instance in the first twenty-four hours of its use, but had invariably destroyed all traces of the disease in forty-eight hours from its first application. The result was the same whether the application was made in the traumatic or idiopathic form of the disease. He had thus cured twenty-seven cases, seven of which were of idiopathic erysipelas. Even in the cases where the deep planes of cellular tissue were involved as well as the surface, the disease on the surface was always apparently affected by the application. It was most positively bleached in all instances, and in

many was evidently destroyed, within the period above stated, even whilst that in the deeper parts proceeded on steadily to suppuration.

1865. *Feb.* 1. *Two Cases of Aneurism.*—Dr. John Ashhurst, Jr., communicated the following account of two cases of aneurism.

Case I. *Popliteal aneurism; deligation of femoral artery; recovery.*—Joseph Fleming, private Co. C, 157th Regt. Penna. Vols., was admitted to the Cuyler U. S. A. Hospital at Germantown, on June 6th, 1864, having been transferred from St. Paul's Church Hospital, Alexandria, Va. Upon examination I found him to be suffering from a well-marked aneurism of the popliteal artery of the right side. The tumour was about the size of a duck's egg, the pulsation being strong and diffused over the whole tumour, the *bruit* loud, but the thrill not very well defined. He kept his leg in a semiflexed position, and complained of constant pain, referred to the tumour and to the ankle of the same side. The limb below the aneurism was somewhat œdematous, dusky, and pitting slightly on pressure.

He stated that he had first observed the tumour some months previously (he could not fix the exact date) after severe exertion in lifting heavy stones. The tumour had gradually though slowly increased in size, and the pain in his limb had latterly become more intense. The only treatment to which he had been subjected before his admission to Cuyler Hospital, was, according to his own statement, the application of an ointment, and of a liquid which from his description appears to have been the tincture of iodine.

There seemed to be no disposition to disease of the arteries in any other part of the body, and physical examination showed the heart to be perfectly healthy.

Bearing in mind Mr. Syme's case in which coagulation and a spontaneous cure were effected by the simple application of a bandage to the limb, this plan was tried, the patient being strictly confined to his bed. No success following this method, forced flexion was next employed, the leg being bent upon the thigh and firmly fixed by numerous turns of a "figure of eight" bandage. This mode of treatment likewise proving unavailing, pressure by means of an instrument resembling Signorini's tourniquet was resorted to, but was found equally ineffective with the means previously employed.

The aneurism in the mean while was steadily enlarging, and the risk of venous obstruction becoming daily more imminent. I therefore resolved to tie the femoral artery at the lower angle of Scarpa's space, which was accordingly done in the usual manner on June 16th, 1864. Anæsthesia was induced by the use of ether, and the vessel reached by an incision about three inches in length. The hemorrhage during the operation scarcely exceeded a fluidrachm. The pulsation in the tumour ceased instantly upon the tightening of the ligature. The edges of the wound were then brought together by hare-lip pins and several points of the interrupted suture (lead wire being the material employed) and lightly dressed with a dry dressing of sheet lint. The entire limb below the wound was at the same time enveloped in carded cotton. The temperature of the affected limb was at first slightly above that of the opposite side, but soon became normal and so remained. When the state of anæsthesia passed off the patient complained of a burning pain in the heel and ankle, which, however, soon disappeared.

The tumour in a few hours became hard (showing that a clot had formed), and gradually diminished in size, there not being at any time recurrent pulsation. The wound healed almost throughout by adhesion, the ligature

dropping on the seventeenth day, and the progress of the patient to recovery being uninterrupted. The application of cotton to the limb was discontinued after the fifth day. On September the first the wound was entirely healed; a firm tumour was still perceptible in the popliteal space; there was no pulsation to be felt in the tibial arteries.

In reviewing any successful case of an operation so serious as to its prognosis as ligature of the femoral artery, it is important to discover, if possible, whether the successful issue be attributable to any peculiarity in the operation itself, or in the after treatment of the patient. The average mortality after this operation is quite one in three; rather more therefore than after amputation of the thigh. And the statistics of the operation show that its fatal result has in most instances been due to gangrene of the limb below the wound. The prevailing idea in the profession is that the gangrene is due to the interrupted arterial supply, and hence the great anxiety felt that the collateral circulation should be established.

But this idea in the case of aneurism is erroneous, as has been shown among others by Porter in his valuable monograph. In these cases the risk of gangrene is from pressure on the venous trunks from the coagulation of the blood in the tumour itself. And this is one reason why in many situations the "old operation," or that of Antyllus is better than the Hunterian; because the sac being there opened and the clots turned out all risk of venous obstruction is prevented. For the same reason where the Hunterian operation is preferred, as is generally the case in popliteal aneurism, it is important that the operation should be performed early, before the tumour has enlarged to such an extent as to embarrass the free return of blood from the parts below. It is to the observance of this rule in the case just narrated, where the operation was resorted to as soon as it became evident that it was necessary, that the successful issue is to be attributed; neither the operation nor its after treatment having offered any points differing from the ordinary course of such cases.

Case II. *Traumatic aneurism of the brachial artery.*—For the notes of the following case I am indebted to Dr. John M. Leedom, Acting Assistant Surgeon U. S. A., in whose ward the patient was treated.

David Smith, private Co. "E," 6th Pa. Cavalry, 29 years of age, was admitted to Cuyler U. S. Army hospital on the 29th of June, 1864; he had been wounded by a conical ball on the 12th of the same month, at Trevillian Station; the ball having been extracted on the field from the pectoral muscle of the left side in which it had lodged The ball had passed transversely across the upper part of the patient's left arm, grazing the brachial artery in its course. His wounds were perfectly healthy and almost cicatrized when he came under observation in this hospital.

The attention of Dr. Leedom was first called prominently to the condition of the artery, by the pain and numbness which the patient experienced in the limb, especially referred to the course of distribution of the ulnar nerve. At the same time the arm became swollen and somewhat œdematous, and a large, pyriform, pulsating tumour was developed over the upper third of the artery. The thrill and *bruit*, though not very well marked, were sufficiently distinct to leave no doubt as to the nature of the affection. A small superficial abscess had formed over the tumour, and had opened externally.

On the 16th of July, 1864, the patient having been brought thoroughly

under the influence of an anæsthetic mixture (ether and chloroform), an incision was made into the sac, the clots which it contained rapidly turned out, and the opening in the artery being compressed by the finger of an assistant, two ligatures were passed by means of an aneurismal needle, and secured respectively one above and the other below the point of hemorrhage. The lips of the incision were then carefully adjusted with metallic sutures (silver wire), and the limb below the point of ligation wrapped in carded cotton.

With the exception of a chill, which occurred the next day, but was not repeated, the case progressed favourably until the morning of the fifth day after the operation, when profuse secondary hemorrhage, to the estimated amount of 21 ounces, necessitated the opening of the wound. It was now found that one of the ligatures had become partially detached, and the case was treated as one of wounded artery from any other cause, fresh ligatures being applied above and below the bleeding point. No further hemorrhage occurred for thirteen days, when, August 3d, 1864, a second bleeding, to the amount of about 16 ounces, required the wound again to be opened; a ligature was placed this time upon the artery as it emerged from the anterior fold of the axilla. Two days later there was still another hemorrhage, evidently from the distal end of the vessel, and, as the patient was by this time much exhausted by repeated loss of blood, the arm was promptly removed at the shoulder joint by Assistant Surgeon Schell, U. S. A., the surgeon in charge, a flap being obtained from the belly of the deltoid muscle. The ligature which had been placed upon the axillary artery two days previously was suffered to remain, and rendered the operation materially easier; not more than six ounces of blood were lost upon this occasion.

It should be stated that shortly after the first attack of hemorrhage (July 21st), the affected arm became the seat of phlegmonous erysipelas, running on to suppuration, and giving rise to two large ulcers, one over the inner condyle of the humerus, and the other a short distance above. Whether owing to the cacoplastic state of the blood consequent upon this erysipelas, or whether the blood had lost its coagulability from the repeated hemorrhages themselves, amputation, which generally suffices to prevent all further bleeding, did not in this case accomplish the desired result; for the stump had to be opened within thirty-six hours to check a fresh hemorrhage. The blood on this occasion appeared to ooze from the muscular tissue, rather than to proceed from a vessel of any great size, and was controlled by pressure and the application of a solution of the per sulphate of iron.

The next day, Aug. 7th, the main ligature on the axillary artery became detached, and of course a profuse jet of arterial blood ensued. The hemorrhage was, however, quickly arrested by the pressure of a finger, and again deligation was practised high up in the axilla; the wound of amputation being prolonged towards the clavicle. Still another and a final hemorrhage occurred on the evening of the next day, August 8th, also from the axillary artery, its ligature being again loosened by the ulcerative process. The vessel was once more tied as it emerged from beneath the clavicle: the patient survived the last operation about two hours.

No *post-mortem* examination was made, owing to the anxiety of the relatives to remove the corpse.

As in recording any successful case it is important to reflect whether

there were any peculiarities of treatment to which in particular the successful result is to be attributed, so when unfortunately the issue is unfavourable it behooves the surgeon to review carefully the course he has pursued, and ascertain, if possible, if in any respect he might have acted more judiciously. Would a different procedure at the outset have probably resulted more satisfactorily? Would any other course at the beginning have been justifiable under all the circumstances of the case? At what point in the history of this case began the series of phenomena which terminated with death? What modification of treatment, if any, might have averted the fatal issue?

In answering the first of these questions it must be remembered that the arm was greatly swollen, exceedingly painful, and that gangrene from venous obstruction was daily if not hourly imminent; moreover, the fact that the skin was broken over the sac by a superficial abscess, rendered it not impossible that rupture and fatal hemorrhage might occur at any moment. Hence that operative interference was necessary was unquestionable. There were three operations which suggested themselves at this juncture, viz., ligature of the subclavian artery, amputation at the shoulder joint, and the "old operation" for aneurism which was performed.

Even if tying the subclavian artery were not so often attended as it is with an evil result, it promised but little in this case; for the great risk of gangrene from venous obstruction could not but be increased by the coagulation and hardening of the blood in the tumour; and hence this operation was promptly and as I think properly rejected. Amputation at the shoulder joint, if performed at the beginning, would probably have been successful; but would it under the circumstances have been justifiable? The "old operation" as performed, promised quite as well as amputation, and had over it the great advantage of probably preserving limb as well as life. By opening the sac all venous congestion was at once removed, and the limb placed in the most favourable condition for recovery. The risk of secondary hemorrhage, which was the principal remaining danger, would have been about equal after either operation, and after amputation would have certainly been attended with more immediately serious consequences. Hence the first and second questions of our criticism may, I think, be answered in the negative: no other course promised better, and, under the circumstances, any different plan would have been scarcely justifiable.

The answer to the third question is more doubtful. This man was exposed to the same hygienic and meteoric influences before as after his first hemorrhage, yet erysipelas was not developed, till, by loss of blood, his system was depressed to the point where the erysipelatous influence could produce its effect. On the other hand, in spite of the condition of his limb, he did comparatively well for thirteen days, the second hemorrhage not recurring until that period. But this and the subsequent bleedings might not have occurred had not the plasticity of the blood been interfered with by the erysipelatous affection. It is, therefore, impossible to fix the exact point at which the fatal sequence of events began.

Would an amputation at the time of the first hemorrhage have altered the final issue? Probably it would; but the same reasoning that caused its rejection in the first instance, rendered it unadvisable at this juncture. Should the limb have been sacrificed when invaded by erysipelas? Amputation through an erysipelatous member, though occasionally successful, is more frequently followed by a rapid death, and hence should not be per-

formed except when seeming to afford the only though but a faint chance of recovery.

Upon the whole, then, in a careful review of the case, whose unfortunate history has been detailed, it does not appear that any different treatment would have offered a more favourable prospect. Possibly an amputation on the night of the second hemorrhage, Aug. 2d, might have been successful; but the chance would have been but possible, not probable. There are a great many circumstances that cannot be noted in a written history, which combine to determine a surgeon as to the course proper to be pursued in any individual case; and it is very seldom that it can be said definitely, that if one thing had been done, or another omitted, the results and termination would have been different.

# SUMMARY OF THE TRANSACTIONS

OF THE

# COLLEGE OF PHYSICIANS OF PHILADELPHIA.

FROM APRIL 5, TO NOVEMBER 1, 1865, INCLUSIVE.

1865. *April* 5. *Mammary Cancer.*—Dr. JOHN ASHHURST, Jr., presented a specimen of cancer of the breast which he had removed from a patient in the Episcopal Hospital. She was a married woman, 62 years of age, and had suffered from the affection for which she was admitted for not less than 15 years. During the last 18 months her pain had been so acute and constant that she was exceedingly anxious for an operation, though fully understanding that the relief which it promised could in all probability be merely temporary. The tumour was seated in the upper part of the left mamma, involving a portion only of the gland, but extending into the neighbouring tissues, being adherent to the skin, and likewise to one of the costal cartilages and the adjacent intercostal muscles. Two glands in the axilla were much enlarged and indurated, and there were one or two tubercles detached from the principal mass and excessively tender to the touch. The most adherent portion of the tumour was ulcerated to the extent of about an inch square, and from this surface occasional hemorrhages took place. The patient was extremely feeble, and exhausted from pain and loss of sleep.

Ether having been freely administered, an incision was made of a somewhat oval form so as to include all of the diseased integument; it was afterwards found necessary to extend it considerably so as to remove the diseased axillary glands. The tumour was removed as much as possible by tearing instead of cutting, the healthy portion of the gland being, however, allowed to remain. Four ligatures were required; two of them to the cephalic vein, which was divided in removing the axillary glands. The edges of the wound were approximated without much difficulty by means of silver and lead wire sutures, and supported by broad strips of adhesive plaster. The patient reacted but slowly from the effects of the ether, and for a few days suffered a good deal from dyspnœa; a chronic catarrhal affection, under which she laboured, having been aggravated by the irritating vapour.

The incision rapidly healed, to a great extent by adhesion, and the patient's constitutional condition improved in an equally satisfactory manner.

About a week or ten days after her discharge from the hospital, however, she applied for readmission on account of agonizing pain in the right leg. It was now found that the tibia had become greatly enlarged, and acutely sensitive to the touch. She stated now, which she had never mentioned before, that some months previously she had struck her leg against the bedstead, and that she had had some pain in walking ever since, though she had paid but little attention to it till she had left the hospital, her mind being occupied by the condition of her breast. Malignant disease of

the tibia was diagnosticated, and, as it had advanced very rapidly during the preceding three or four days, she was advised to submit to an amputation as a means, if not of prolonging life, at least of alleviating her present suffering. She, however, positively refused the treatment proposed, and, of course, left the hospital.

The excised mammary tumour was microscopically examined by Dr. Packard, and found to present the usual multiform cells, some containing several nuclei, and many containing numerous nucleoli.

*May* 3. Dr. PACKARD made a verbal communication on the subject of Anæsthesia, as follows:—

My attention was attracted a few days since by an article, from the pen of Dr. Lente, of Cold Spring, N. Y., published in the last number of the *New York Medical Journal*, and entitled "Sulphuric Ether *versus* Chloroform." In that article Dr. L., who is well known as an advocate of the use of ether by his writings in various periodicals, says: "This fact I regard as settled—that a patient may be brought under the influence of sulphuric ether as quickly as he can safely by chloroform, and with a quantity costing less, and weighing but little more than the requisite amount of the latter; the objection, then, sometimes raised by army surgeons, of increased trouble of transportation, is not tenable.

"If any doubt this fact, after referring to the statistics above alluded to,[1] *I will agree to go to any hospital where a large number of operations are being performed, and demonstrate it to the satisfaction of the opponents of ether.* * * * *

"The recently published report of the Royal Medical and Chirurgical Society of London, adverse to the employment of sulphuric ether, and the recent occurrence of so many additional cases of death from chloroform poisoning, have forcibly recalled my attention to this subject, and, at the risk of a charge of egotism, induced me to make the offer which I here repeat; in other words, that is, to guarantee to get a number of patients, in any hospital, under full anæsthesia with sulphuric ether in as short a time as can safely be done with chloroform, and with a quantity not exceeding an average of two ounces and a half, the average time two minutes and a half. The average time and quantity would probably be less in the ordinary run of hospital cases (not more than half as much in cases of considerable debility, and after hemorrhage or insufficient nourishment, as in many cases in military surgery)."

Until the fall of 1864 I had been in the constant habit of administering chloroform for the purpose of inducing anæsthesia, and in hundreds of cases had never seen any injurious effect from it. My reason for preferring it to ether was the greater facility of carrying it, the very much smaller quantity required, and the more agreeable character of its influence. A case which occurred then, however (reported by me to the College, and published in the *American Journal* for January, 1865), in which death was imminent, and averted only by the prompt use of an electro-magnetic battery, shook my confidence; and it was shortly followed by another, in which death actually took place, at the Beverly U. S. A. Hospital.

Another case has very recently occurred to me, in private practice, in

[1] Given by Dr. Lente in the American Journal for April, 1861, in the American Medical Times, June 28, 1862, and in a Report of the Committee of the Boston Society for Medical Improvement, published in 1861.

which chloroform, given to a patient already nearly insensible from ether, was productive of alarming symptoms.

Dr. Lente's statements, as before quoted, led me to write to him to inquire as to the method of administering the ether, in order to obtain the effect in so short a time, and with so small a quantity of the article. His answer to my question is contained in the following extract from his letter:—

"All you want for the efficient administration of ether, after procuring a pure article (and Squibb's I prefer to any other), are stiff paper and a rather stiff and thick towel, if one can be had—if not, any will do. I usually take a newspaper—as that is to be had in every house—fold it, so as to make it about eighteen inches long and seven to eight broad; fold the towel so as to correspond, lay one on the other, fold them so as to form a cone, with the *towel inside*, and pin them securely, especially the edges of the towel inside, so that it will not fall on the face and annoy the patient. The apex of the cone must be folded tightly, so that *no air* can enter. If the cone is rather elongated, I stuff a white handkerchief tightly into it, so as not to have its capacity too great. You see the great object is to have the vapour *as concentrated as possible*, just the reverse of what is safe with the vapour of chloroform. The patient being all ready, I explain to him fully how to inhale the ether, and the unpleasant symptoms which he will probably experience at first, assuring him of the perfect safety of the process (which cannot be done in the case of chloroform). I then have some one take hold of his hands quietly, so as to be ready to arrest any sudden movement towards tearing away the inhaler from the face, and other assistants to look out for other violent movements, so that the process, when once commenced, shall not be interrupted for a moment. I then pour on, from a three or four ounce bottle, with not too narrow a mouth, about a drachm or two of ether (if I am anxious to use as little as possible), if not a little more, until I ascertain the capacity of the patient for breathing it; if he does not cough or strangle, I put it in close contact, taking care always not to press in the sides of the cone, so as to encroach on its capacity, holding it with *both hands*, near its edges, and pressing them pretty firmly, at all points, against the face. If he persistently hold his breath, as patients occasionally do, or strangle in any considerable degree, I remove it *slightly* from the face for a moment. In a very short time, I throw on an ounce more of ether, and then keep the inhaler in close contact with the face; this is repeated, scarcely ever using more than three or four drachms at each fresh application, until the etherization is effected. A very important point, and one most generally neglected, is to keep the inhaler away as short a time as possible when replenishing the ether, *throwing it on*, and not deliberately pouring it on, as I usually see done. As long as the patient retains consciousness, if he does not follow my directions with regard to full and rapid inspirations, I now and then call loudly, in his ear, *breathe strongly!* No matter how hard his struggles are, after he has commenced to breathe fully, I never 'let up,' but keep the cone remorselessly pressed against his face, and ply him still more strongly with the ether. This must be especially attended to in the case of all children, for with them it is generally a struggle from the beginning, whether ether or chloroform be used, and it is neither necessary nor practicable to get their confidence so as to ease them with the inhalation, as I have described above in the case of adults. Their cries and consequent full inspirations cause them to succumb very rapidly.

"By following these directions you will, after a little practice, etherize your patients as quickly and with as little trouble as you can safely chloroformize them—that is, in from three to four minutes (average), and with from one and a half to two and a half ounces of ether. But if you choose to use from *two to three* ounces of the drug—and more than the latter is almost never necessary—you may shorten the time by a minute. I speak of comparatively robust adult subjects; with feebler, less time and less ether are required. It is better to have no current of air about the patient during the process, if possible. It is important to be fully impressed with the fact that there is absolutely no danger

of death from *too sudden action* of the ether, otherwise we will not give it with sufficient confidence to insure a prompt result. The little danger attaching to ether is from *prostration*, which always occurs after the operation is over, and the patient has recovered his consciousness. I have, in several communications, insisted that the pulse should be watched for a time after the administration of ether, especially in delicate subjects, or if there are any indications of extreme debility. I have had, and have published several cases of severe prostration succeeding etherization, but I have never seen any case where I could get a patient too suddenly under the effect of sulphuric ether. It is not surprising that when the manner of administering the two agents is so entirely different, those who have generally been in the habit of using one, should fail when attempting to employ the other, until they have become thoroughly accustomed to it. I gave ether a short time ago to myself, in the hospital at West Point, unassisted, and became completely insensible with half an ounce, so as to be unconscious of the extraction of a molar tooth by the hospital steward, Mr. Saunders. A few days after, with a four ounce bottle of ether, I etherized three patients, from whose jaws the steward extracted at least forty teeth in the aggregate, and used only about three-fourths of the contents of the bottle. As regards the *nausea* and *vomiting*, referred to in your letter, if no food be taken for four or six hours before the operation, there is seldom any trouble worth mentioning. It is usually well to give a little brandy and water or a glass of wine before the operation, especially if the subject be feeble. And in case of severe operations, if much prostration supervenes, I give an enema of brandy and water. I have thought for some time of having an inhaler constructed of silver wire network, with a cone of woollen over it, and some impervious material over that, as suggested by my friend Prof. T. G. Thomas, but I succeed so well with the extemporized apparatus above described, that I have not yet had it done."

I have not yet had an opportunity of trying this method of administering ether, but, from what I know of Dr. Lente, I am inclined to place great confidence in what he says. It is very doubtful whether we ever obtain any other anæsthetic agent at once so safe and so efficient as sulphuric ether; we certainly have not found any such as yet. If, therefore, we can improve upon the methods now generally in vogue for its administration, we shall do well to prefer it to its more dangerous rivals.

*July* 5. *Report on Meteorology and Epidemics for the year ending Jan.* 1*st*, 1865. Dr. JAMES M. CORSE presented a report, of which the following is an abstract:—

The meteorology of Philadelphia for the past year has not been marked by any striking variations from the usual phenomena. The temperature has departed from that of the preceding year by only a slight variation.

The following table will give the maximum, minimum, and mean temperature, monthly, for the year 1864:—

| | Maximum. | Minimum. | Mean Temp. |
|---|---|---|---|
| January | 64. | 9.50 | 33.28 |
| February | 58. | 5. | 35.97 |
| March | 58. | 22. | 40.50 |
| April | 75.50 | 34.50 | 50.58 |
| May | 85.50 | 44. | 67.20 |
| June | 99. | 65.50 | 72. |
| July | 93.50 | 77. | 76.08 |
| August | 96. | 73. | 79.40 |
| September | 80. | 50. | 65. |
| October | 76.50 | 39. | 54.75 |
| November | 69.50 | 25. | 45.80 |
| December | 60. | 12. | 36.77 |

The mean temperature for the year was 54.77° Fahrenheit.

*Rain and Snow.*—The fall of rain and snow during the year 1864 has been a little more than three inches less than the year 1863.

The following table will give the monthly distribution of the rain and snow for the last three years:—

| | 1864. Inches. | 1863. Inches. | 1862. Inches. |
|---|---|---|---|
| January | 1.705 | 4.720 | 4.795 |
| February | .551 | 4.680 | 4.640 |
| March | 5.170 | 5.885 | 3.553 |
| April | 3.795 | 7.015 | 4.160 |
| May | 8.685 | 4.510 | 2.308 |
| June | 2.345 | 4.250 | 6.975 |
| July | 3.770 | 6.009 | 2.462 |
| August | 1.920 | 1.447 | 4.925 |
| September | 7.165 | 0.875 | 2.980 |
| October | 1.820 | 2.465 | 4.770 |
| November | 3.930 | 2.700 | 4.740 |
| December | 5.145 | 4.633 | 1.650 |
| | 46.001 | 49.189 | 45.008 |

*Epidemics.*—On this subject we can have but little to say for the year 1864. The good climate and favourable hygienic circumstances of Philadelphia exempt us, in a great degree, from epidemics at all times, and when they do prevail it is not common for them to be violent in their effect, or of long duration. Of epidemics not enough is known to enable us to speak with precision, and without occupying your time with speculations upon the cause of them, upon the nature and mode of operation of the morbific agent, or what forms the constitution of the atmosphere within any given period or season, we may say, with propriety, we think, that the epidemic constitution of the atmosphere in the first quarter of the year was such as to incline all diseases to a low grade of action corresponding to the fourth epidemic constitution of Hippocrates. It improved a little for the second and third quarters, but was again very strong in the fourth quarter. The first and second quarters were very damp, with prevalence of febrile diseases, corresponding to the autumnal constitution of Sydenham, this constitution was much more strongly marked towards the close of the year. It will be remembered that the winter of 1863–64 was mild, so much so that we failed to get a supply of ice for summer use; the spring was cold, wet, and late, and we noticed that the growth of cryptogamous plants was more luxuriant than usual; the northern exposure of walls, and the bark on the north side of trees were covered, near the ground, with mono-cellular algæ, particularly the chlorosporeæ; fungi, lichens, and mosses were also more abundant than usual.

These facts, and others of a similar kind, would allow us to suppose that other and lower forms of vegetable growth were produced in greater abundance than usual, and help to sustain those hypotheses which attribute epidemic diseases to a vegetable origin.

The same facts may also be used by those who suppose epidemics to have an animalcular origin, for many species of the well-known lower forms of life are classified by zoologists among animals, while botanists claim them for the vegetable kingdom.

No disease has prevailed in Philadelphia during the year 1864 to which the term epidemic could be properly applied.

A quasi-epidemic has prevailed to which some give the name of spotted

fever, others cerebro-spinal meningitis, others, again, malignant fever, etc. etc.; it seems to be a disease with diverse symptoms, all of an adynamic character, which are best treated by tonics, stimulants, and nourishing food.

Under the head of spotted fever 240 deaths have been reported to the Board of Health for the year 1864; 49 for 1863, and none previously.

Typhus has prevailed to a considerable extent, but it can hardly be called epidemic; yet there has been a gradual increase for the last three years, as the following statement will show:—

*Deaths from Typhus.*

| 1862. | 1863. | 1864. |
|---|---|---|
| 37 | 131 | 335 |

In 1864 the deaths were, quarterly, as follows:—

| 1st Quarter. | 2d Quarter. | 3d Quarter. | 4th Quarter. |
|---|---|---|---|
| 168 | 70 | 45 | 52 |

The disease made its appearance in the female department of the County Prison in November, but was, by the timely, judicious and energetic measures, arrested without a death, after attacking 15 prisoners, two convicts, and five untried, and many of the officers of the Institution.

The whole number of deaths in Philadelphia for the year 1864 is 17,582. This includes the entire city in its present extended limits.

This number is 1,794 greater than that for 1863. The causes for these deaths, registered at the Health Office, amount to 275 in number. A very large majority, however, were occasioned by comparatively few causes. Consumption of the lungs alone having occasioned 2,089.

Subjoined is a table of 36 causes, which account for 14,607 deaths, leaving only 2,975, for which a long list of causes are assigned.

The following table presents a carefully compiled list of deaths, showing the comparative mortality from their causes for the last four years.

| Causes. | 1864. | 1863. | 1862. | 1861. |
|---|---|---|---|---|
| Apoplexy | 181 | 194 | 176 | 162 |
| Casualties | 178 | 120 | 135 | 122 |
| Convulsions | 736 | 681 | 703 | 630 |
| Croup | 455 | 444 | 258 | 304 |
| Congestion of the brain | 440 | 421 | 324 | 275 |
| " " lungs | 172 | 183 | 147 | 110 |
| Consumption of the lungs | 2,089 | 1,955 | 1,949 | 1,817 |
| Cancer | 180 | 140 | 181 | 189 |
| Cholera infantum | 641 | 930 | 622 | 611 |
| Diphtheria | 357 | 434 | 325 | 502 |
| Dropsy | 224 | 225 | 236 | 284 |
| " of the brain | 218 | 225 | 200 | 202 |
| Disease of the heart | 345 | 305 | 242 | 260 |
| " " brain | 99 | 103 | 98 | 112 |
| Diarrhœa | 454 | 315 | 417 | 183 |
| Debility | 756 | 926 | 940 | 826 |
| Dysentery | 249 | 176 | 163 | 157 |
| Drowned | 133 | 131 | 135 | 99 |
| Fever, scarlet | 349 | 275 | 461 | 1,190 |
| " typhoid | 648 | 486 | 654 | 281 |
| " typhus | 335 | 131 | 37 | 45 |
| " spotted | 240 | 49 | ... | ... |
| Gunshot wounds | 366 | 310 | 292 | 20 |
| Hooping-cough | 87 | 78 | 208 | 93 |
| Inflammation of brain | 440 | 386 | 365 | 305 |
| " " bronchi | 185 | 122 | 116 | 138 |
| " " lungs | 929 | 743 | 749 | 681 |
| " " stomach and bowels | 289 | 267 | 306 | 231 |
| Inanition | 219 | 129 | 125 | 124 |
| Marasmus | 598 | 606 | 643 | 533 |
| Measles | 90 | 82 | 109 | 74 |
| Old age | 278 | 234 | 219 | 203 |
| Palsy | 172 | 201 | 164 | 159 |
| Smallpox | 260 | 171 | 264 | 758 |
| Stillborn | 788 | 743 | 711 | 630 |
| Unknown | 427 | 112 | 97 | 104 |
| | 14,607 | 12,815 | 12,771 | 12,458 |

The aggregate monthly mortality is exhibited in the following table, which is interesting as showing the effect of vicissitudes of the weather on the general health of the whole population :—

| | | | |
|---|---|---|---|
| January | 1,302 | August | 1,956 |
| February | 1,434 | September | 1,251 |
| March | 1,894 | October | 1,144 |
| April | 1,377 | November | 1,212 |
| May | 1,529 | December | 1,595 |
| June | 1,245 | | |
| July | 1,643 | | 17,582 |

The following table of deaths of soldiers, in military hospitals, amounting to 1,598, is very interesting in showing what sort of diseases are engendered or aggravated by camp life :—

*Interments of Soldiers.*

| | | | |
|---|---|---|---|
| Albuminuria | 1 | Fever, congestive | 2 |
| Asthma | 1 | " camp | 1 |
| Abscess | 3 | " nervous | 1 |
| Accidents | 22 | " malignant | 1 |
| Asphyxia | 1 | " spotted | 4 |
| Aneurism of the aorta | 1 | Fatty degeneration of heart | 2 |
| Apoplexy | 6 | Fracture of skull | 1 |
| Anemia | 1 | " of thigh | 5 |
| Amputation | 1 | Gangrene | 8 |
| Cancer | 1 | Hemorrhage | 20 |
| " of the stomach | 2 | " from bowels | 2 |
| Cholera | 1 | " from lungs | 4 |
| " morbus | 1 | Hernia | 1 |
| Congestion of the brain | 12 | Inflammation of lungs | 135 |
| " " liver | 1 | " of brain | 17 |
| " " lungs | 7 | " of bronchi | 12 |
| Coup de soleil | 2 | " of heart | 2 |
| Croup | 2 | " of peritoneum | 6 |
| Consumption of lungs | 122 | " of stomach and bowels | 18 |
| Cerebro-spinal meningitis | 6 | " of larynx | 1 |
| Convulsions | 2 | " of tonsils | 1 |
| Concussion of the brain | 1 | " of pleura | 12 |
| Compression of the brain | 6 | " of veins | 2 |
| Dropsy | 7 | " of liver | 3 |
| " of the chest | 1 | " of spine | 1 |
| " of heart | 3 | Inanition | 66 |
| " of lungs | 1 | Insanity | 2 |
| Disease of stomach and bowels | 1 | Jaundice | 3 |
| Disease of brain | 1 | Murder | 4 |
| " of kidneys | 2 | Measles | 6 |
| " of heart | 10 | Mania-a-potu | 16 |
| " of liver | 1 | Mumps | 1 |
| Drowned | 6 | Marasmus | 2 |
| Diarrhœa | 214 | Ossification of heart | 1 |
| Dysentery | 22 | Palsy | 3 |
| Debility | 22 | Pyemia | 59 |
| Diphtheria | 15 | Rheumatism | 3 |
| Erysipelas | 15 | " of the heart | 2 |
| Enlargement of heart | 1 | Suicide | 1 |
| Epilepsy | 6 | Softening of brain | 2 |
| Empyema | 4 | Scrofula | 1 |
| Exposure | 1 | Shock | 1 |
| Fever, typhoid | 183 | Smallpox | 19 |
| " lung | 1 | Sore throat | 1 |
| " typhus | 12 | Syncope | 1 |
| " intermittent | 2 | Tetanus | 7 |
| " bilious | 1 | Unknown | 33 |
| " remittent | 1 | Ulcers | 1 |
| " traumatic | 1 | Ulceration of stomach | 2 |
| " yellow | 1 | Wounds, gunshot | 355 |
| " hectic | 1 | | |
| " scarlet | 4 | Total | 1,598 |
| " catarrhal | 1 | | |

*Oct.* 4. *Cancer of the Ascending Colon.* Dr. ALFRED STILLE reported the following case of this :—

In April, 1864, I was asked to see Mr. X. He was 52 years of age, had been for twenty years or more a bank clerk, and in his habits was most methodical and exemplary. His constitution was naturally somewhat delicate, and his person slender; his complexion was clear, and neither pale nor

florid. His father died of stone in the bladder; and a sister, and, if my memory serves me, his mother also, of cancer. Since childhood he had been subject to attacks of diarrhœa, apparently from food disagreeing with him; but his appetite and gastric digestion had always been excellent. He had never suffered any serious attack of acute disease. During the last ten years he had been subject to neuralgia of the left sciatic and crural nerves, which was much relieved by the interrupted galvanic current.

In 1861 he experienced a severe attack of diarrhœa, and afterwards continued to be more liable to it than previously; for the last few months before my visit the stools had been very frequent, and his flesh and strength declined. I found him pale and thin; his pulse 65, and feeble; without cough or heart symptoms; his appetite and digestion good. The abdomen presented a natural aspect, and was everywhere indolent except between the umbilicus and the right flank, where, within a space of about two or three square inches, there was tenderness under pressure and a sensible hardness. Under the use of suppositories containing opium and strychnia the diarrhœa ceased, and a diet consisting exclusively of milk, cream, butter, farinaceous articles, and meat essence was strictly enjoined. The improvement was such that Mr. X. was shortly enabled to partially resume his duties at bank.

During May and June, 1864, however, a very steady but gradual loss of flesh occurred, and the complexion acquired a pale straw tint. The stools were usually of a natural colour, and consisted of small, hard, rounded masses, with more or less mucus, or else of narrow cylindrical pieces; but sometimes they were formed principally of mucus, and were voided with pain. There was a good deal of vesical irritation, requiring the patient to rise frequently at night. This symptom was relieved by lime-water. As the summer advanced, the tumour became more palpable, not so much on account of its own growth, as because the integuments grew thinner. Still, its mass was certainly greater, and estimated as measuring two by three inches in diameter. The least departure from the prescribed regimen, and especially the use of solid food, even in very small quantities, occasioned pain and tenderness in the tumour, and diarrhœa, which was usually checked by acetate of lead and opium. During July, on one occasion a small piece of rare beef was eaten for dinner; the same night severe pain was felt at the seat of the tumour, which was of an intermittent character, and the swelling itself largely increased. These symptoms were very severe for eighteen hours, when they suddenly ceased, and the tumour subsided to its ordinary dimensions. Two stools followed, which were of a natural consistence. About a week afterwards a similar attack occurred. On this occasion the abdomen was distended and resonant; and, although not tender, it was the seat of constantly recurring paroxysms of severe pain, extending throughout the belly, but most violent at the seat of the tumour. The pulse became thready, the extremities cool, the features pinched, and there was hiccup with occasional retching, and the rejection of a greenish liquid. Fomentations with spirit of turpentine and the administration of repeated doses of calomel, extract of hyoscyamus, and creasote allayed the vomiting, palliated the pain, and at last produced an alvine evacuation, and the complete subsidence of the abdominal distension, and of the pain. For several days afterwards the tumour swelled visibly and palpably if it was handled, causing at the same time a slight colicky pain.

From this time there was less suffering. In the month of August the feet began to swell; but the muscular strength improved as well as the

appetite, and the patient walked or rode out daily; and by the end of September had gained five pounds in weight. He resumed his duties at bank. At the end of October he had general but slight anasarca, which was most conspicuous in the feet. The urine contained no albumen, showed no sediment, was acid in its reaction, and had a sp. gr. of 1.018. In November a mild spontaneous diarrhœa caused the evacuation of nearly all the dropsical effusion, after which the strength improved so far that, although with some difficulty at first, the patient went to his office to transact important business. For three months afterwards he did not require any special attention, but continued to perform his duties, although he suffered inconvenience from the renewal of the dropsy, especially in his lower limbs.

I was called once more to visit him about the end of March, 1865, when the effusion was undergoing a rapid and spontaneous discharge by the kidneys, occasioning a good deal of prostration. There was no pain nor diarrhœa, and the appetite was good. The skin was paler, and the veins more pinkish; the urine normal. It may be mentioned here that the patient had all along been taking one or another preparation of iron; cinchona, usually in the form of tincture, and more or less wine or whiskey according to his appetite and strength. These tonics and stimulants now became more necessary, because his tissues were evidently wasting and his blood growing more watery. An additional proof of the last statement consists in the soft blowing murmur which now began to be heard in the heart, and in the great arteries of the neck, and which thenceforward grew louder and more shrill. Furthermore, hurried palpitation of the heart, with a sense of constriction at the præcordia, was induced by all muscular efforts and every lively emotion of the mind.

From this time a gradual and steady decline of flesh and strength took place, notwithstanding the appetite continued to be good, and food sufficient for normal nutrition was consumed. No striking change occurred in the size, relations, or sensibility of the tumour; the bowels were regularly moved, and the stools of good consistence and colour, were generally more or less scybalous. As the flesh and strength wasted, the pulse gradually became more frequent, rising from 72 very slowly until it reached 96 and upwards, and also grew faint and thready. Towards the close of July diarrhœa was renewed without pain or abdominal disturbance of any kind; the stools consisting of a yellowish, thin, gruel-like, and very fetid substance. Finally, life slowly departed without the slightest struggle, on the 9th of August.

I was permitted to make an examination of the body, of which I availed myself so far as to inspect the abdominal organs and to secure the diseased part, which is herewith presented.

There was a small quantity of clear liquid in the cavity of the abdomen; but no vascular injection, no adhesion, nor other sign of peritoneal inflammation. The caput coli, appendix cæci, and ileo-colic valve were perfectly healthy, and for two and a half inches above the valve there was no trace of disease. From that point, and upwards, for a distance of three or four inches, the calibre of the colon was very much narrowed, at one place to such a degree that the end of the little finger could scarcely be passed into it. The mucous membrane itself, except a slight superficial abrasion, the one-eighth of an inch in diameter, appeared to be perfectly sound. But the remaining coats, for about one-half or two-thirds of the circumference of the colon, were lost in a mass of scirrhous cancer in the first stage of

softening, and which became thicker towards the meso-colon, in which also the glands were enlarged and hard. No other secondary cancerous deposit was observed in the liver or elsewhere.

It is worthy of remark in this case that from first to last the cancer gave rise to no pain, except what was due to occasional obstruction of the bowels by solid food. It is also to be remarked that the appetite was always good, was often craving, and the patient's imagination dwelt willingly upon the good things he might eat and drink. Further, that in spite of a large quantity of food, especially of milk, bread, and other farinacea, with juice of beef, &c., emaciation was steadily progressive, and anæmia gradually, and at last in a remarkable degree established. This is the more noticeable when it is remembered that none of the organs concerned in primary absorption and assimilation were diseased, but only one whose chief office is excretory; and also that the loss of strength by diarrhœa or pain was very trifling. The case in question, then, may be regarded as tending to confirm the doctrine that the constitutional dyscrasia, much more than the local lesion, is the cause of decline and death in many cases of cancer.

My chief object, however, in presenting this case to the College is that its history and illustrative specimen may be preserved as an example of cancer in a very unusual situation. Cancer of the stomach, the rectum, the sigmoid flexure, the transverse colon, and the cæcum, are frequent in the order mentioned, but I have never seen an instance in which the ascending colon was the only part of the intestine involved, nor have I met with such an example on record. It appears to me that in this case the disease began in the meso-colon, and gradually embraced a portion of the intestine. This view is suggested by the greater thickness of the deposit in the meso-colon than elsewhere, the freedom from cancer of the colon opposite to its attachment, and the soundness of its mucous membrane in spite of so protracted a disease.

*Regeneration of Bone.*—Dr. Hunt reported that regeneration of the bone had taken place to a remarkable degree in the case of excision of the lower jaw for phosphorus-necrosis, in which the periosteum had been preserved, an account of which was published in the *American Journal* for April, 1865 (p. 353). The patient was introduced into the room, and examined with great interest by the Fellows of the College who were present.

*Nov.* 1. *Tumour on the Posterior Portion of the Tongue.* Dr. Wm. Hunt reported the following case:—

Mary M., aged 16 years, was admitted into the Pennsylvania Hospital on account of a tumour situated on the posterior part of the tongue, and immediately in front of the epiglottis. The tumour was very large for the place that it occupied, and apparently completely filled the fauces, but on examination it was found that the neighbouring structures had accommodated themselves to its presence, for the velum could be readily raised from it, and the finger passed behind and around its posterior surface. The epiglottis could be felt also without difficulty, and, upon drawing the tongue forward and depressing it, the parts behind were seen to be entirely normal. All of the morbid growth could not be seen or felt, as it descended beyond the reach of the finger, and its size was not fully appreciated until it was operated upon. In every other respect the patient appeared to be perfectly healthy, and she applied for relief because the tumour was growing and becoming troublesome, interfering with speech and deglutition, and with respiration when in the recumbent position.

The history, as obtained from the patient, is as follows. Five years ago, during an epidemic of diphtheria, she felt some uneasiness in the throat. It was examined by a physician, and he then discovered a small tumour, about the size of a pea, on the middle of the posterior surface of the tongue. Nothing was done for it, and it continued to grow without giving rise to pain or even uneasiness, until it became nearly as large as when the patient was admitted into the hospital.

The surface of the tumour was very red, with large distended vessels coursing over it. There was no pulsation. It was quite elastic, and had an indistinct fluctuating character, but not decided enough to indicate fluid. The opinions as to its nature were various, but favoured the view that it was a hypertrophy of glandular tissue, and probably connected with the part known as the foramen cæcum, at the apex of the circumvallate papillæ.

An operation was decided upon, and it became quite a problem how to manage such an uncontrollable part. A peculiar tenaculum with a large curve was made, and into the shaft of this was fixed a sliding-piece of steel, with a catch to fit the point of the tenaculum. The object was to hook the tumour deeply, and after the point appeared on the opposite side, to push the slide forward where it would be held by the point of the tenaculum. The handle of the instrument was set at an angle with the shaft, so as not to interfere with the view or the manipulations. It was decided to try the ecraseur first, and, if this failed, ligation was to be resorted to.

The operation was performed October 7th, 1865. The patient was etherized, but in this state she was altogether unmanageable, as the tongue fell back, carrying the tumour with it; and as her own co-operation was necessary, she was soon freed from the anæsthetic, and held herself bravely during the operation. The tenaculum worked well, but the ecraseur was a failure, both on account of the small portion of the tumour that could be engaged by it, and the limited space to work it in. After several trials it was therefore abandoned, and by placing the finger behind the tumour, and by the use of the tenaculum, I was enabled to draw it so far forward as to bring its posterior surface in view. A large needle, armed with a double silk ligature, was then passed through its base, entering on the posterior aspect. The threads were cut so as to include both sides, and with the assistance of Dr. Agnew, a large mass was thoroughly strangulated. An incision was then made into it, and a small amount of a peculiar gelatinous-looking substance exuded, but there was no disposition to empty itself. This material was at once examined under the microscope, and its character agrees more with the adenoid or glandular variety of morbid growth than with any other form. The drawing of its appearance is herewith presented.

The patient was placed in bed. She slept tolerably well on Saturday night. On Sunday had some sickness of stomach, with vomiting. By night, had marked fever, pulse running up to 120. Experiences no particular difficulty from the tumour, but is very sensitive to light, and wishes the room darkened.

On Monday the same symptoms continued in a more aggravated form, but on inspection the mass of perfectly strangulated matter seemed sufficient to account for them, as they were in no wise different from those of a person having an ordinary sloughing wound. Acetate of ammonia and morphia were given, and also a mouth wash of permanganate of potash was used.

The patient was closely watched throughout. At 7 o'clock Monday evening, she said she felt better, and would like to sleep. She got on very well until one o'clock A. M., when she complained of *lightness in the head.* At 2½ o'clock she had a sense of smothering, but at 4 o'clock, after waking, she talked about what she would like to have for breakfast, and again went to sleep, having previously spoken of the peculiar sensations in her head. At 15 minutes of 5, Dr. Andrews, the resident in charge, was called in great haste by the nurse, who said that she could not arouse Mary, and that she had some difficulty in drawing her breath. The doctor found her in the following condition. Entire unconsciousness; respiration interrupted, two or three quick gasps, followed by a pause of at least one minute; lips blue; face livid; pulse small, quick, irregular. He thought the tongue had fallen back, and pulled it forward by passing the finger around the tumour, but did not hold it there, as there was no perceptible change in the symptoms. Œdema of the glottis had been all along the prominent accident in mind, and thinking there was trouble of this kind, the doctor at once performed laryngotomy, and inserted a tracheal tube. This had the effect of rousing the respiratory movements for a little while, but the patient soon fell into the same condition as before; I was sent for; arrived at about 6 o'clock, and found her in the following very peculiar state. Entire unconsciousness; head thrown back; eyes open, conjunctiva injected, pupils perfectly fixed, and of medium size. She would lie perfectly quiet for 58 seconds, timed by the watch, and during this time the pulse would become slow, and sometimes fall as low as 60 beats per minute, then would come two or three quick, jerking respirations, accompanied by the expulsion of frothy and bloody mucus from the tube. The blood was from the cut. The discharge had a very offensive smell. The quick respirations would soon subside, lasting only a few seconds, then there would be an interval of 58 seconds, again to be followed by the jerking respirations. During the interval the lips and fingers were livid, and this lividity would partially disappear while the respirations were going on, but they did not continue long enough, at any time, for the complete disappearance of it. Percussion was clear over the whole chest, and *during the respirations* the air could be detected permeating the lungs, the mucus only interfering with it, and producing the ordinary râles. Artificial respiration was resorted to, although to no effect, for the patient was evidently not dying from apnœa. Galvanism produced contractions of the external thoracic muscles in a perfectly normal way, without any influence on the condition. Strong ammonia, applied to the nostrils, produced facial contractions, but had no effect in arousing consciousness or stimulating respiration. Cut cups were applied to the back of the neck, but did no good. The anal sphincters were relaxed, and the rectum would not retain injections. Deglutition was not performed, as fluids placed in the mouth regurgitated, although on two occasions I thought I noticed an act like that of swallowing. These phenomena continued until 12 *minutes before* 9 *o'clock A. M.*, when death took place. Shortly before death the respirations were shorter and somewhat more frequent, and consciousness was totally absent, as it had been from the beginning of the serious symptoms.

*Autopsy eight hours after death.*—Rigor mortis well marked. Patient was menstruating at time of death. The membranes of the brain were very much congested throughout, but the cerebellar membranes and those of the medulla intensely so. The brain substance appeared to be healthy every-

where, both as to consistence and colour. There was no abnormal amount of fluid in the ventricles.

*Thorax.* The lungs were crepitant but markedly congested on the inferior and posterior portions. The bronchia contained a considerable amount of frothy and bloody mucus. The heart was healthy, and contained no fibrinous clots; even the *right* cavities were freer from blood coagula than usual, and presented nothing like the appearance of distension, as in ordinary cases of asphyxia.

The abdominal viscera were healthy.

There was nothing abnormal in the larynx or trachea, no œdema of the glottis, or anything interfering with the calibre of the main air-passages.

*Remarks.*—I think there can be no doubt that this patient died from disturbance of the brain. The phenomena presented for four hours before death, and the autopsy confirm this, but I confess I am unable to establish a clear relation between the tumour and the fatal involvement of the great nerve centres.

Three views may be taken of the case. 1st. Suffocation by the falling back of the tumour, and death by ordinary asphyxia, the brain becoming fatally congested in a very short time. 2d. Reflex paralysis from including a large number of the filaments of the glosso-pharyngeal nerve, the irritation being transmitted from there to the ganglionic connections of the pneumogastric and to the medulla, and thus influencing the respiratory actions, the vessels of the brain at the same time becoming abnormally distended through some peculiar influence on their walls. 3d. Coincidence.

As to suffocation. By this I mean death by the backward pressure of the tumour, or by œdema of the glottis. The last condition we know positively did not exist. If the *accident* had happened, could it have occurred without a struggle on the part of the patient? Is it possible for a person to be suddenly choked in the open air without having convulsive movements? The peculiar and violent efforts of the victims in such instances are known to all, and are particularly dwelt on by authorities. In this case there was no struggle. The evidence is positive on this. I have carefully sifted it, and find that at no time was the patient unwatched. The regular nurse saw her every few minutes, and a middle-aged and reliable woman was with her in the interim, and took great interest in her. Both of these say there was no struggle or fit, and that they did not know anything was wrong until they tried to waken her. When Dr. Andrews came, his efforts to relieve her, by drawing the tumour and tongue forward, were of no avail, and thinking the case was certainly one of suffocation, and that the cause might be lower, he performed laryngotomy without effect. There was no sudden inspiration, nor any of the phenomena of relief that ought to follow such a procedure. Lateness, I think, could not be claimed, as the patient lived three and a half hours after the laryngotomy. Then the *post-mortem* appearances. There was none of that packing, as it were, of the great veins and the right side of the heart, which peculiarly belongs to ordinary asphyxia; on the contrary, the heart was not *engorged* with blood in any of its cavities. About the time of the death of this patient, a man was waiting his discharge in the medical ward, who really *did* suffocate, and whose case affords a striking contrast to the one under consideration. He was in for syphilitic disease of the larynx. For days his breathing was of the most laboured and convulsive character. He would have violent paroxysms, would become perfectly livid, and his veins would distend almost to bursting. Then partial relief would come by relaxation, and he would

struggle along, having paroxysm after paroxysm, until finally what appeared to be the last one came. He became perfectly unconscious, breathless and pulseless, and drawn up, in the sitting posture, with his knees to his chin. Dr. Wm. Pepper hastily performed tracheotomy and inserted a tube. There was no response. The man to all appearances was dead. Artificial respiration was resorted to, and after more than a minute there came a gasp, which was followed by others, and finally the man was restored, and is now about pursuing his avocation. He breathes through the tracheal tube, and enjoys tolerable health. I have merely related those points of his case bearing on the asphyxia.

I am inclined to adopt the view that this was a case of transference of irritation from the ligated tumour to the respiratory centres, and that the vessels of the brain became secondarily involved, as indicated by the "lightness in the head" and the drowsiness. The breathing phenomena already described are not unlike some of those following lesions or divisions of the pneumogastric; and although this nerve was not directly involved in the operation, its intimate connections with the glosso-pharyngeals could easily make these the transferrers of irritation to the centres which are so near each other. To be sure there was no *detectable* change in these structures or their centres, but I do not think that it can be claimed that we know all about the nervous system, and the alterations that occur in it. I am well convinced that the death was not one from mechanical obstruction to the larynx, and in this all who saw the case agree.

Coincidence is a mere suggestion, and, of course, one upon which no data, other than the mere facts of the case, can be given.

*Fatal Peritonitis in Typhoid Fever, without Perforation of the Bowel.* Dr. Alfred Stillé reported the following case:—

July 1, 1865, I was called, in consultation with Dr. Keichline, to see his patient, Master B., a lad of seventeen, who was convalescent from a mild attack of typhoid fever, which had begun about three weeks before. The day previous to my visit, while still in bed, and without any known imprudence in exercise or diet, he was suddenly seized with a severe pain in the right iliac region, with general coldness and collapse, from which reaction took place gradually, with fever. At my visit, twenty-four hours afterwards, the countenance was good; skin of natural temperature; pulse 116, rather feeble. Intelligence unimpaired; no vomiting, nor stool; flatus discharged with relief; abdomen moderately tense and motionless during respiration. Full inspiration occasioned pain in the right iliac region, but the whole abdomen was somewhat tender to pressure with the hand. In addition to oil of turpentine, of which six drops were taken every three hours, bran poultices to the abdomen, and beef-tea for food, one grain of opium every four hours was prescribed.

The following morning we learned that the patient had passed the night comfortably, without vomiting or stool, and with less pain. There had been some discharge of flatus from the bowels. The facies was good; the tongue moist and clean; the hands cool, but the feet warm; the legs extended; there was no spontaneous pain except on passing wind; abdomen less tender, but rather more tense.

The following day the pulse was smaller and feebler (150); respiration 24; abdomen more distended and motionless, very resonant to percussion, but not very tender; legs can be moved freely without pain; appearance of exhaustion; intelligence perfect. Large turpentine enemata were prescribed in addition to the other remedies. These symptoms continued during

the day, the exhaustion becoming greater; no vomiting occurred, and but little discharge of flatus. Assafœtida was substituted for turpentine in the enemata, and produced a copious discharge of flatus with marked relief.

On the fourth day of the attack, the evidences of exhaustion were more distinct; the abdomen was rather less tense, and scarcely tender to the touch; three or four liquid stools were voided, and the urine was passed involuntarily. On the fifth day, Dr. Fricke was added to the council. Patient's debility increased, the pulse fell from 150 to 128; the skin remained warm, and the mind clear. There was still no vomiting, but several very fetid liquid stools were voided, with abundant flatus. In the evening wandering delirium commenced and jactitation; the skin became clammy and cold, and the head hot; the pulse grew more rapid and feeble, and death by exhaustion took place the next morning about seven o'clock.

On the following day I examined the body in presence of my professional associates in the case. It had been preserved in ice. The abdomen was less distended than during life; its surface was mottled with green and blue; its cavity contained about a pint of *nearly clear serum;* the upper surface of the intestines was of a dull, reddish or brownish colour, dry and sticky to the feel, and their folds were, in many places, adherent to one another by very slight and soft films of lymph. These adhesions were most distinct and firm in the right iliac region, but were easily broken up without laceration of the intestine. A very careful inspection failed to discover any opening into the bowel; but at several points there was a depression showing that there the peritoneum alone bounded the intestinal cavity. These depressions were one or two lines in diameter. The mesenteric glands were moderately enlarged, but not softened.

The glands of Peyer in the last eight or ten inches of the ileum were all enlarged and ulcerated, as well as the isolated follicles. In most of the former, the remaining gland substance had a fungous appearance, projected above the general level of the mucous membrane, and was surrounded by a hard and sharply defined edge. In some glands a portion of the follicles had been thrown off, giving to what remained a ragged, warty appearance. In several the tissues had been destroyed to various depths; and in two at least, corresponding to the external depressions before noticed, the ulcers reached quite to the peritoneal coat, but without penetrating it. There was an ulcer on the edge of the ilio-cæcal valve, about a quarter of an inch in diameter, and fungoid like the rest. Within an inch of the valve, and in the colon, were several enlarged, but not ulcerated glands.

This case has been recorded in confirmation of the proposition, already sustained by the published observations of Rayer, Jenner, Shattuck, Mayne, and others, that the occurrence of peritonitis during typhoid fever, by no means implies that perforation of the bowel has taken place. It was also singular in the absence of vomiting from among the symptoms, and in the ability of the patient to extend his limbs. Those peculiarities were so striking as at one time to inspire some suspicion that the diagnosis of peritonitis might not, after all, be correct. Under similar circumstances I should be disposed to recommend mercurial medicines in minute, as well as opium in full doses, believing that they would afford the patient one chance more for life.

## MEMOIR OF ROBERT P. THOMAS, M. D.

By Henry Hartshorne, M. D.

It is a trite observation, that the worth of a man of unobtrusive usefulness is never known until he has left the scene of his labours. True in any sphere, this is especially apt to be illustrated in the medical profession; where, without éclat, a man may become almost indispensably important to a large circle of society; the amount of dependence upon his daily solicitude and effort being unrecognized until after his death.

When, too, this last event is sudden, as in the case of the departed fellow of the College, of whose life the present record is attempted, the surprise is the more painful, because of the previous absence of a full appreciation of him who is lost. The least that can then be done, is to cherish the recollection of his value, and find in his excellences matter for instruction and imitation.

The same absence, however, of the conspicuous or notorious from such a life, which prevents its even tenor from attracting much public attention, makes it impossible to do justice to its character by any narration, citation of incidents, or description of traits, such as make the substance of biography. Leaving, therefore, the honourable remembrance of our late fellow to depend chiefly, as it must, upon the familiar and appreciative knowledge of those who have been long associated with him, I propose to made this account of him very brief.

Robert Pennell Thomas was born in this city, May 29th, 1821. His father, Daniel J. Thomas, a merchant, and his mother, Sarah E. Thomas, daughter of Robert Pennell, of Chester County, Pennsylvania, are still living. Both are descended from early settlers of Pennsylvania; and are members of the Society of Friends. The early education of the subject of this sketch was obtained, first, in the Friends' Academy in Fourth Street, and afterwards in Friends' West-town Boarding School.

At sixteen, he entered the counting-house of a shipping firm, Walters and Souder, of this city. Although industrious and useful in this establishment, his mind entertained other aspirations; and he passed his time out of business hours in enlarging, assiduously, his intellectual resources. Amongst other accomplishments, he at this time acquired the knowledge of the French language. Before leaving the counting-house, he commenced the study of medicine; which he completed afterwards, under the private tuition of an able fellow of this College, Dr. George Fox, at the University of Pennsylvania. He took his degree in 1847. A year sooner, he had obtained the appointment of assistant apothecary to the Philadelphia Dispensary; where his close fidelity to his duties, intelligence, and quiet geniality of disposition, made him a favorite with all. Dr. Thomas' inaugural essay was upon "*Morbus Coxarius;*" a choice of subject which already indicated a bias of mind in favour of surgery; and his taste for this department of professional labour and study was never lost, although other topics, from circumstantial causes, were made to engross a large amount of his time.

Our friend began, immediately after graduation, the career of a practitioner; with no special advantages or opportunities to hasten his access to the prize of a large practice, the attainment of which, in this city, has long been proverbially slow, if not doubtful, even with men of ability and acquirements. No trait, however, was more evident in the character of Dr. Thomas, than perseverance. Of a hopeful and cheerful tempera-

ment, also, though calm in demeanor, he gave all his energies to his profession, determined to command success by deserving it.

If there be something melancholy in the thought of laborious years thus spent in view of the goal set before him of a remunerative and satisfactory business, and of a high and honoured place in the profession and the community, to be cut off just as he was realizing his hopes, we may yet be sure that such toil and devotion have a reward in themselves. It is, here as elsewhere, less the thing pursued than the pursuit that confers happiness, by energizing the noblest powers of our nature.

In 1849, Dr. Thomas married the daughter of John Bacon, of this city, who now survives him with three children.

During the brief but somewhat brilliant existence of the Franklin Medical College of Philadelphia, Dr. Thomas began his career as a medical teacher as demonstrator of anatomy in that college. He met, in this department, with success, and gave evidence of ability as an instructor, which was afterwards fully recognized.

In 1850, a vacancy was left in the Philadelphia College of Pharmacy by the election of Dr. Joseph Carson to a chair in the University of Pennsylvania. Dr. Thomas was chosen, in his place, professor of materia medica in the College of Pharmacy, a post which he continued to occupy, to the highest advantage to the institution and credit to himself, to the day of his disease.

In 1855, Dr. Thomas was elected one of the consulting surgeons to the Philadelphia Hospital, where he entered, with his accustomed zeal and methodical industry, upon the duties of surgical attendance in the wards and clinical instruction in the amphitheatre. It was a matter of regret with him as well as with others, that, after a single term of service, his sense of professional dignity and propriety compelled him, with the rest of the medical staff of the hospital, to resign, on the appointment to its chief physicianship of an individual not entitled to recognition by the profession.

In 1857, he was, on account of his growing reputation as a surgeon, elected consulting surgeon to the Northern Dispensary; and, in the same year, to the more important position of attending surgeon to the Episcopal Hospital. No one was, or could be, more faithful to such a responsible trust than he, and when, in 1862, the large and admirable new buildings of that hospital were made ready for occupancy, and were opened for the admission of sick and wounded soldiers of the army engaged in suppressing the rebellion, Dr. Thomas was commissioned by the Government as surgeon-in-charge. The difficulties and anxieties connected with the first organization and administration of a large army hospital, where none engaged in it have had any like experience, are, of course, many and serious. Dr. Thomas devoted himself manfully and successfully to this task, although he was thus obliged to occupy hours many of which might have been, with more profit to himself, given to his private practice. His interest in military surgery was also shown, as well as his anxiety to contribute personal service to those who suffered in the cause of the country, by his going to the field on two occasions of emergency; once at Yorktown and its vicinity, during the campaign of General McClellan, and again after the battle of Gettysburg.

Dr. Thomas was elected a fellow of this College in January, 1851, and was, at the time of his death, a member of its Committee of Publication. He was, from the time of its origination, always an active and prominent member of the Philadelphia County Medical Society, and, as one of its

delegates, of the Medical Society of the State of Pennsylvania. Of the latter he was treasurer for several years; and he was constituted Vice-President of the County Medical Society not long before his death.

His professional literary labours were important and valuable, although not very numerous. He edited the second edition of *Griffith's Formulary* in 1854, and the tenth and eleventh editions of *Ellis's Formulary* at different times, the last having left the press only a few weeks before his death. Completeness and accuracy mark his share in each of these works. Earlier in life he translated for publication Cazeaux's treatise on *Midwifery.* To the *Journal of Pharmacy* and the *Proceedings of the American Pharmaceutical Association* he contributed several papers of value. Among them may be named a paper on the Texas Sarsaparilla, written in 1855, showing the difference between this and the true or genuine sarsaparillas; one on Garlic, in 1860, describing a hybrid intermediate between the garlic and the leek, sold as garlic in this city; and an essay on the culture of Elaterium, published in 1862. In the *American Journal of the Medical Sciences*, Jan. 1856, appeared an article from his pen upon the use of the Sulphate of Cinchonia as a substitute for the Sulphate of Quinia in the treatment of Intermittents; and, in the same journal for April, 1862, a still more important and very able paper upon the Colour Tests of Strychnia as modified by the presence of Morphia. The latter essay gives the results of an investigation suggested by the facts concerning the famous trial of Palmer, in England, for poisoning, and by papers written by others on the subject. The question dealt with is, "as to the possibility of detecting strychnia at all if it be associated with an equal or a greater quantity of morphia, or a salt of morphia in the presence of an organic fluid." To determine whether strychnia is actually decomposed when treated with test agents in the presence of morphia, or whether it is merely masked by such presence, Dr. Thomas performed more than a hundred experiments, of the most satisfactory of which he gives account. Believing the discrepancies in the results obtained by different observers to depend, in great measure, on their divers modes of procedure, a precise description is afforded of his own method of testing. A high degree of acuteness, as well as of patient carefulness, is certainly manifested in this investigation. He arrives at, and, indeed, establishes as proved, the conclusions that strychnia can be detected by colour-tests, even when masked by morphia, to the extent of twenty times its own weight; and, that strychnia in minute quantities can be regained from organic mixtures, notwithstanding the presence of three times its weight of the sulphate of morphia. Perhaps the most valuable result of the inquiry may be considered to be the evidence obtained of the extreme importance of the details of the process, some of which had been overlooked by previous experimenters.

Dr. Thomas contributed a few papers to the *American Journal of the Medical Sciences* upon surgical subjects. Of these the most interesting were: "A Case of Suspected Fracture of the Base of the Skull, with Peculiar Phenomena" (Jan. 1861), and, in the same number, "Two Cases of Fracture of the Thigh, with an Account of a New Apparatus." The apparatus described, to the success of which the writer can testify, from personal observation of the cases reported, was contrived to carry out the indications now generally recognized; viz: to maintain counter-extension and extension, both in the *direct line of the limb*, and to give to both the greatest possible fixity and steadiness compatible with the avoidance of excoriation. Referring to the paper cited for the description of its arrange-

ment, I do not hesitate to express the opinion that it is at once more reliable and more manageable than Physick's Desault; and, indeed, that no apparatus with which I am acquainted is superior to it for general use.

Dr. Thomas's mind was eminently practical in all its habits and tendencies. Without unusual brilliancy, he was versatile, and gave to everything that he undertook a conscientious attention, and persistent and methodical industry, which insured merit and success to his performance, and usually met with appreciation. As a lecturer, he was superior. Thus writes of him Prof. E. Parrish, his successor in the chair in the College of Pharmacy: "In the class he was popular, from the clearness of his instructions, the urbanity of his manners, and the genuine goodness of his heart; to the members of the College, who came in contact with him at its meetings and elsewhere, he attached himself closely in relations of confidence and friendship. In the investigation and illustration of his subject, he was indefatigable; and, while he added to his own cabinet, he enriched also that belonging to the College."

In the practice of his profession, few men have more thoroughly obtained and kept the confidence and affection of patients and their families. Among them he is, and will long be, painfully missed. In his conduct towards his fellow practitioners he was always scrupulously honourable; I know of no whisper of accusation of anything unfair or ungenerous against him, in this or in any other relation of life. "Not slothful in business," nor unmindful of his duty to himself and those dependent upon him in advancing properly his legitimate interests, he was open in all his efforts, moderate in his oppositions, fair towards all rivals, and untiringly faithful to his friends.

Always of an earnest and serious although cheerful disposition, Dr. Thomas became a professing member of the Episcopal Church, in 1853. He was afterwards quite active and useful in Grace Church, of which he was for a considerable time a member of the vestry, and warden at the time of his death.

This event—his death—was, as already intimated, sudden in the manner of its approach. On the evening of the 1st of February, 1864, though suffering with a headache, he delivered a lecture at the College of Pharmacy with his usual ease and effectiveness. The next morning he felt quite indisposed, but prepared to go out to visit patients. This he found, however, that he was unable to do, and he retired to bed. In two or three hours he became entirely unconscious, with extreme jactitation; and, in spite of treatment promptly instituted by medical gentlemen who gave him assiduous attention, he died, comatose, on the afternoon of the next day, February 3d. The presence of "spotted fever" in the city and its vicinity at the time impressed his professional attendants, among whom was the President of this College, Dr. Wood, with the view, that the occult cause of that epidemic would best account for the peculiarity of the symptoms of the case, and its rapidly fatal termination.

Consigned to his last resting-place in the presence of many professional and other warmly attached friends and relatives, these will long remember the beautiful and solemn discourse pronounced on the occasion by Bishop Potter, to whom the deceased was well and favourably known as a personal friend. A laborious life was thus ended; its honourable earthly ambitions in part defeated of their aims; happily, thus was met an earlier fulfilment of his higher aspirations, as a Christian man, in a world which has no disappointments.

## MEMOIR OF WILLIAM DARRACH, M. D.

By Dr. Beesley.

The College of Physicians has assigned to me the duty of preparing a memoir of our worthy associate, the late Doctor William Darrach, who died at his residence in this city of congestive pneumonia, after a short illness, on the sixth of the Fifth month (May) 1865, aged nearly sixty-nine years; greatly lamented, not by his own family and relatives only, but also by a large circle of friends and patients.

Unequal as I feel myself to do full justice to the character of one so eminent and so much my superior, the friendship which has existed between us for more than forty-five years, and the regard with which I must always cherish his memory, induced me to make the attempt, especially as his family have kindly furnished me with a variety of interesting information relating to our departed friend, for which my thanks are gratefully tendered to them.

Dr. Darrach was born on the sixteenth of the Sixth month (June) 1796, in the city of Philadelphia. His father, James Darrach, is described as a man of great integrity of character, of a lovely and generous disposition, and as a kind benefactor of the needy.

His paternal ancestry were of Scotch-Irish descent, and settled in the colony of Delaware before the revolutionary war. His mother, Elizabeth Darrach, was the eldest daughter of Thomas Bradford and Mary Fisher. Thomas Bradford was the son of William Bradford, who accompanied William Penn to the site of Philadelphia. He was the first to establish a paper-mill and printing press in North America, and was printer to the government for fifty years. He was a vestryman of Trinity Church, New York, where, a few years ago, the centennial anniversary of his death was celebrated. I had the pleasure of some acquaintance with the mother of Dr. Darrach, then a widow; her demeanor and conversation have left on my memory an impress of a very agreeable kind. She survived her husband a number of years, and had much to do, I doubt not, in the formation of her son's character and the cultivation of the religious element in his heart. His maternal ancestry for five generations have lived and died in Philadelphia. Here he received his early education. After attending the preparatory and collegiate departments of the University of Pennsylvania, he entered the junior class at Nassau Hall, Princeton, New Jersey. In that institution he graduated as bachelor and master of arts.

Choosing the medical profession for the business of life, he then entered as a student the office of Dr. Philip Syng Physick, who was esteemed the principal American surgeon of his day. He continued for three years as his pupil.

With warm interest, memory recalls the years of our youth, our early playmates and the companions of our studies; those, especially, who have cheered us on in the pursuit of knowledge by their example of zealous and untiring industry in climbing the hill of science, in gathering the beautiful flowers and rich fruits of its broad fields, in penetrating its recesses to draw thence the valuable ores treasured in its deep and inexhaustible mines. With such feelings, recollection brings before me my valued friend Darrach, and our almshouse medical companions, Drs. Berrien, Mosely, M'Clellan, Gwathmey, and Freeman: the two former, as our seniors, the three latter, our juniors, in that eventful period of our medi-

cal life. Dr. Darrach and I entered as resident physicians of the Philadelphia Almshouse in the autumn of the year 1818. Soon afterward, typhus fever of a malignant type appeared in Philadelphia, and prevailed greatly in the almshouse, which was then located on Spruce Street, between Tenth and Eleventh Streets and (with the exception of two or three wards, called select wards) was badly ventilated. The house becoming crowded, a building with low ceilings, outside the walls of the institution, was taken for the sick, and was soon filled to a dangerous repletion. Dr. Darrach and several of the resident physicians had severe attacks of the fever, which was prevalent for several months. Dr. James Freeman sank under an attack of it near the close of his term of service.

Nobly and diligently did Darrach perform his professional duties under these painful and alarming circumstances. Harmoniously did the little band of medical youths labor together day and night to cure or to relieve the sufferers around them; but the want of good nurses, the deficient ventilation of the wards, and the shattered constitutions of many of the paupers, rendered their attention and skill unavailing in many cases.

During his term as a resident physician, Dr. Darrach not only studied the character of the diseases brought under his notice, but, in his ardor for improvement, performed some dangerous experiments upon himself, from the injurious effects of which, I apprehend, he did not fully recover for several years. In the spring of 1819 he graduated at the University of Pennsylvania as doctor of medicine, and soon afterward sailed for Europe to enlarge his knowledge of the science of medicine and its collateral branches. The three subsequent years which he spent there were devoted principally to an attendance on the best teachers and hospitals, cabinets and museums of Scotland, England, France, and Italy, with a zeal, industry, and application excelled by few. He attended two courses of lectures of the late John Abernethy, one of Sir Benjamin Brodie and Herbert Mayo, and, occasionally, those of Sir Charles Bell and Astley Cooper. He became a pupil of the Charter-House Eye Infirmary, and of the Lock Hospital, and attended the clinical lectures of Lawrence, Tyrrell, Babington, and Gregory; also the clinics and operations of Guy's, St. Bartholomew, Middlesex, and St. George's. In Paris, he attended the lectures at the Garden of Plants, College of France, and Duplessis, and the schools of medicine. Daily he followed the clinics of the Hôtel Dieu, La Charité and Hospital of St. Louis. He also became a member of the class of Blainville on Comparative Anatomy, of that of Alibert on Diseases of the Skin, and daily prosecuted the study of Human and Comparative Anatomy in the Pavilion and Garden of Plants. In addition to these, he received instruction from those eminent surgeons Roux, Boyer, Geffroir, Larrey, and Scarpa, of Italy.

Prepared, as Dr. Darrach was by his home professional education, theoretical and practical, he was well qualified to obtain a great amount of useful information, from these varied and interesting streams of knowledge, of which his after life and conversation gave full evidence that he had imbibed freely. Although his mind was eagerly bent on the acquisition of such knowledge as would best qualify him as a general practitioner of medicine and surgery, he did not neglect the opportunity of visiting various parts of the continent, especially classical Italy. The wise king has said, "There is a time for all things," and now the period came for him to return to his native city to apply to the benefit of his

fellow creatures the science and skill he had purchased with no small outlay of money and labor.

Since his return from Europe, he has continued as a general practitioner of medicine, up to the period when he was called from works to rewards, allowing himself only a short summer excursion of a few weeks to recruit his physical powers, enfeebled by over-exertion in the duties of his profession.

He early became a physician to the Philadelphia Medical Dispensary, an institution which has conferred, through its charities, incalculable benefits upon the poor of this city. For seven years continuously he served each year as one of its physicians, and during the remainder of his life, was elected as its consulting physician. Then he became the physician and surgeon of the Eastern Penitentiary, in which capacity he acted for ten years, and, for a subsequent year, was its consulting physician. This was no light labor, as I know by some experience, having attended the prison for Dr. Darrach several times during his absence from Philadelphia. He also prepared monthly and annual statistical medical reports, in which he satisfactorily exposed the cause of the insanity and mortality unjustly charged on that institution, conducted, as you are aware, on the principle of solitary confinement or non-association of the prisoners. These reports and statistics have become the basis of the successful arguments of its friends against the previous annual attacks of the American Discipline Society.

And now let me notice some of his literary labors. He early published an excellent work on the Anatomy of the Groin, elucidated by good plates of the parts, which has become an authority on that topic. As a collaborator of the *North American Medical and Surgical Journal*, he annually contributed clinical reports.

He was early a member of the Philadelphia Medical Society, of the County Medical Society, the College of Physicians, and of the Academy of Natural Sciences.

He took an active part, from 1843 to 1854, a period of eleven years, in supporting the Pennsylvania Medical College as a member and President of the Faculty of that institution, of which he filled the chair of the Theory and Practice of Medicine. His lectures were delivered daily through the session, and he took much pains to instruct his class by the exhibition of extensive pathological paintings and diagrams, and by two weekly clinics. These lectures, he stated, were based upon a practice of many years, and under a classification of common consent, which every practitioner is forced into as soon as he becomes established in practice, viz., fevers, inflammations, chronic complaints, and nervous affections. His lectures were delivered to his class with much energy of manner, and as if he deeply felt the importance of the instruction he uttered. I have read, years since, strong testimonials to the high value set upon these lectures by alumni of that college, after testing them in their practice with success.

Dr. Darrach really loved to communicate to others the medical truths which his own mind had gathered by reading, observation, and reflection; and he allowed his lectures to encroach not a little on the practice of his profession, to his own pecuniary loss. Whatever he undertook, he did it heartily, pursuing with energy, zeal, and untiring industry through his life, the study, practice, and teaching of our noble and humane art. Certainly, in these respects, his character is worthy of our admiration.

Retiring from his vocation as a public lecturer, he still continued to take private pupils, and devoted himself more fully to general practice, and that at a period of life when many would have chosen to rest from their labors. Meeting him only a few days previous to his last illness, his usual cheerful countenance and quick step evinced no flagging, either mental or physical, and I little thought that he was so soon to be called from works to rewards.

Turning from the bright example of his public life, permit me to lift the curtain which hides from our view the beauties of his character in his association with his patients, and the retirement of his family. It seems almost too delicate or too sacred to dwell upon, yet as the picture of the husband, of the father, of the friend, and the physician, has been furnished me by one nearly related to him and well qualified to depict it, I may venture to extract a portion of her communication.

"There was little of incident worthy of record in the retired life of our beloved brother, though few have been more strongly stamped than he with an extraordinary individuality of character, not at all verging on eccentricity, but ever manifesting a peculiar originality in all the movements of his mind. If I allude to his professional qualifications, it is merely to depict him as he appeared to his patients, namely, the perfect delicacy and chaste refinement which ever distinguished him as a true gentleman.

"There was, in fact, an almost chivalric courtesy in his demeanor towards the female sex which was very winning. His life was one of perpetual activity. Ah! how many times have I seen him (and when he had passed three score years), after a day of severe labor, as prompt and ready to tramp through sleet and snow, amid the howling of the storm and in the murkiest night, as in the calm of the spring sunshine, without a thought of his own comfort or any care for his own health. What sunshine of the heart has he brought to many a suffering fellow-creature, and smiles to many a pale face at the sound of his voice, who hailed him with delight as a messenger of mercy and consolation, knowing there were good grounds to confide in his skill, in his tenderness, and in the soundness of his judgment. In every way keeping up with the progressive advances of his profession, and ever ready to reveal freely to others any acquisition which might relieve one pang in any patient.

"In the treatment of the cholera of 1832, he was very successful, and not only communicated his mode of practice to the profession, but also circulated it among the people at large, by issuing hand-bills, which he had posted everywhere, giving ample directions how to promptly check the premonitory symptoms, by which means, it is probable, that many lives were saved without medical attendance. Few men were more enthusiastically beloved by his patients, and many families deeply feel the great loss they have sustained in his death.

"In his domestic life, the most prominent trait of his character was the overflowing expansion of loving tenderness to all with whom he came in contact; it was rare, indeed, to meet with one so entirely free from selfishness as he was; and it was daily manifested in his indifference to his own comfort, and in his tender watchfulness over that of others. Admirable and excellent traits in a physician! I have rarely seen such devotedness as his in the character of a husband and a father. He had been a dutiful son to his mother, whose especial darling he was.

"He was united in marriage with Miss Margaret Monroe (whose heart

and hand he sought and obtained), on the 26th of April, 1826. This tenderly cherished and beloved wife was taken from him, after a lingering illness, in July, 1841, leaving to his paternal care seven children, all too young to be his companions. A heavy weight of responsibility then devolved upon him and aroused him from the crushing grief which otherwise might have overwhelmed him. After more than four years of solitary life, he again sought a companion competent to take the care of his household (Miss Gobrecht), upon whom he lavished the same loving tenderness and devotedness which had been bestowed upon the mother of his elder children. This union added six more claimants of his parental care and love. To his wife and family his rare conversational powers, replete as they were with intellect, and sparkling with vivacity, piquancy, and originality, were a rich source of improvement and enjoyment, and they were always eager to secure his companionship, and warmly welcomed his advent to the home circle.

"I have never known such strictly conscientious performance of the duties of a father; faithfully and literally he obeyed the divine injunction to train up his children in the way they should go, in the nurture and admonition of the Lord.

"His disposition was naturally gentle and serene. In his early days he was impetuous and irascible, as might have been anticipated from one so sanguine and susceptible; his temper had been so changed by grace until it became toned down to a leniency and gentleness of judgment towards others which had not originally appertained to his character. I have heard him say that, as he realized more and more his own failings, he had learned to judge more charitably of others who had fallen. For such he grieved, and strove to bring them to repentance. His cheerfulness was unfailing, and his brightness remarkable. This was the result, we may conclude, of his strong and unwavering Christian faith, combined with a temperament naturally buoyant and elastic; a heart at peace with God and itself, and in charity with all men. He was a true patriot, and his prayers were fervent for his country, for the defeat of the Rebellion, and the return of peace. In short, his was a happy and honored life, and a deeply regretted death. On the last day of his life he said to his wife, 'It is very sweet to have you all around me; you are very precious to me, but Jesus is far more precious. What must have become of one so sinful without Him?' He died with his harness on, and only when his precious life was ended, could we say, 'His work is done.'"

The graphic and beautiful character of Dr. Darrach from which I have freely extracted, entered still farther into interesting details than it seemed proper to introduce into this memoir. Yet I hope there is enough for example and instruction to us in the evidence it gives of the happiness resulting to those who like our departed friend, strive to obey that Divine Wisdom, whose ways are ways of pleasantness and whose paths are paths of peace.

It remains for me to add his character as a member and officer of the Presbyterian Church, to which he belonged. For this I am indebted to the discourse in his memory delivered by his pastor, Charles W. Shields, D. D., who says: "In a word, he was an intelligent and, as I think, a consistent Presbyterian; his creed, though an inheritance, had come back to him, after having been lost for a time, as a logical conviction. It was to him the religion of principle and of conscience and intellect, in distinction from a religion of sentiment, and of taste and form; and he held

to it in all its rugged strength and simplicity with a certain disdain, which he could not conceal, of the philanthropic experiments and pious shams of the day. It was in the church offices he held that he is most naturally lamented by his fellow worshipppers in this congregation. To high theoretical views of such offices he joined peculiar qualifications for administering them, with a degree of fulness and consistency but seldom witnessed. As an elder, he was zealous, efficient, and conscientious; as a deacon, he combined delicacy with judgment in dispensing the alms of the church to the poor; gratuitously adding his own professional services to the sick and needy."

In conclusion, I may remark, that Doctor Darrach appears to have acquitted himself in the various relations of his active and useful life, to the best of his ability and judgment, viewed as a student, a practitioner, and teacher of the healing art, in the domestic circle, and as a member of a Christian church. May we strive to follow the bright example which he has left us, remembering that "the work of righteousness shall be peace, and the effect of righteousness quietness and assurance forever."

## BIOGRAPHICAL MEMOIR OF THE LATE WILLIAM PEPPER, M. D.

By Thomas S. Kirkbride, M. D.

William Pepper, M. D., was born in the city of Philadelphia, Pa., on the 21st day of January, 1810. At the early age of nine years he was sent to boarding-school at Holmesburg, near his native city, where he remained till he entered the academic department of Princeton College. He continued in this college an earnest and devoted student till the 8th of October, 1828, when he graduated with the highest honor. While at Princeton he was an active member of the Whig Society, and manifested many of the traits of character for which he was afterwards distinguished.

Soon after leaving college he became the private pupil of the late Thomas T. Hewson, M. D., a distinguished physician of Philadelphia, and for a long time one of the surgeons of the Pennsylvania Hospital, under whose able supervision he prosecuted the study of medicine with great industry and zeal. He entered the medical department of the University of Pennsylvania in the autumn of 1829, and graduated March 29th, 1832, having passed a most satisfactory examination. His inaugural thesis was on apoplexy.

The Asiatic cholera made its first appearance in Philadelphia in the summer of 1832, and this led to the establishment of temporary hospitals in various parts of the city. Dr. Pepper was one of the first to offer his professional services on this occasion, and spent most of the summer in the hospital at Bush Hill, where he rendered valuable service in the arduous duties appertaining to his position. In October of the same year he sailed for Europe. Soon after his arrival in Paris he entered with great earnestness on the prosecution of his studies in the hospitals of that metropolis of medical science. He remained in Paris thus engaged for nearly two years, devoting himself with remarkable industry to the investigation of disease, and, under the guidance of the ablest men in the profession, especially of Louis and Dupuytren, his progress was of the most gratifying description. It was during his visit to Paris that he had some pulmonary symptoms, brought on by the peculiar winter climate of that city, and which for a time gave himself and his friends much uneasiness. The precise character of this indisposition has not been gene-

rally understood, but one of his intimate friends, now a distinguished surgeon of this city, who was with him, informs me that it was probably pleuritic in its character. Under the advice of Louis he left Paris, and spent the greater part of one winter in Italy and Southern Europe, and on his return, after this period of relaxation, his health seemed to be entirely re-established.

On his return from Europe, in the latter part of the year 1834, he took charge of one of the districts under the care of the Philadelphia Dispensary, a position which he held for three years. It was during this period that the writer first became intimately acquainted with the subject of this notice, although they had been fellow-students and fellow-graduates at the University. Occupying at that time the position of Resident Physician at the Pennsylvania Hospital, it was an arrangement mutually pleasant and profitable by which Dr. Pepper became my frequent companion in my visits through the wards of that excellent and time-honored institution. Fresh from the hospitals of Paris, familiar with most that was to be seen in that wide field for the investigation of morbid phenomena, he entered with the greatest zeal upon a most thorough analysis of disease as presented in our own city, and a careful comparison of his observations abroad with those made in our own institutions.

At that early day in his professional life, in this period of our united studies, I formed an estimate of Dr. Pepper's character, a conviction of his rare ability in diagnosis and his more than ordinary good sense in the application of remedies, which our long subsequent intimacy fully confirmed. So decided were my views on all these points, that although on terms of intimacy with the highest talent in the profession, Dr. Pepper became my own medical adviser, and continued in that relation to render on many occasions most important services to me and my family up to the period of his death. Without some such intimacy Dr. Pepper's character and great ability could hardly be appreciated by any one. This opinion of Dr. Pepper's professional attainments was shared by many others who were interested in the hospital, and to this cause and the acquaintances he then made may be attributed his subsequent connection with that institution.

The manner in which Dr. Pepper performed the duties of physician to the Philadelphia Dispensary was an example for any one commencing the practice of his profession. No matter what was the social condition of his patients, or the adverse circumstances surrounding them, they never failed to receive the most careful attention. The character of every case was examined with the utmost care, and the treatment conducted with a degree of interest that no one could doubt. It may well be questioned whether of all his subsequent patients even when he had attained his highest professional position, any received more careful attention than did those who had the good fortune to come under his care through the Philadelphia Dispensary. The amount of labor which he performed at this time was very great, and from the exposure at all seasons and in every kind of weather, he contracted a pleurisy of so severe a character as to give his friends much uneasiness, and from the effects of which he was confined to his room for several months.

As early as 1832 Dr Pepper became a member of the Philadelphia Medical Society. In February, 1837, he was elected a member of the Philadelphia Academy of Natural Sciences, in the objects of which he always took great interest, and in 1839 he became a Fellow of the College

of Physicians. In the same year he was chosen one of the physicians to the Wills' Hospital, a position which he held for about two years. In 1841 he was elected one of the physicians to the Pennsylvania Institution for the Instruction of the Blind, and continued for a considerable time to devote himself with his usual earnestness to the care of the inmates of that interesting charity.

On the 9th of May, 1842, under circumstances highly flattering to him, he was elected one of the Visiting Physicians to the Pennsylvania Hospital, a post which he continued to occupy, with great advantage to the institution and honor to himself, till the 29th of December, 1858, when, owing to the pressure of other engagements and his state of health, he felt compelled to resign.

In April, 1851, Dr. Pepper became a member of the American Philosophical Society, and, on the resignation of the eminently distinguished Professor Wood, he was elected, on the 5th of June, 1860, Professor of the Theory and Practice of Medicine in the University of Pennsylvania. He occupied this chair and performed its duties with rare ability till the spring of 1866, when, having completed his fourth course of lectures, he was led, from increased feebleness of health, to tender his resignation.

In June, 1840, Dr. Pepper was married to Miss Sarah Platt, of Philadelphia, who, with their seven children, two of whom are members of the medical profession, survived him. He was peculiarly happy in his domestic relations, and no one could appreciate more highly than he did the blessings of such a home, after the exacting daily trials of a most successful professional life.

As already stated, Dr. Pepper was attached to the Pennsylvania Hospital as one of its attending physicians for a period of nearly seventeen years. The same conscientious performance of duty which characterized him in all his other relations was conspicuous in this. Although at times in greatly enfeebled health, he did not permit this to interfere with his daily visits to the wards, and during his entire term of service there, he never once failed to be at his post. This position, while it furnished a large field for medical observation and experience, brought him prominently before the profession as a teacher of clinical medicine. As such, his lectures were remarkable for the searching manner in which he investigated his cases, the importance he attached to the observation of every symptom however seemingly trivial, the accuracy of his diagnosis, and the simplicity and success of his practice. These lectures were attended by large classes of students, and gave him a reputation as a clinical instructor second to none on this continent.

The qualifications of a successful clinical and a didactic lecturer are not always to be found in the same individual, and some of his friends were not without misgivings when Dr. Pepper accepted the chair of the Theory and Practice of Medicine in the University of Pennsylvania. These apprehensions were soon shown to be unfounded, and the performance of his new duties only added to his already distinguished reputation.

As a didactic lecturer, he was clear, concise, and yet complete. Thirty years of active practice had made him familiar with disease in its varied forms, and had led him to reject, as useless, that which was merely speculative in medicine, while it enabled him to speak "with authority" of all that was valuable in our science. Thoroughly familiar with medical literature, he had also studied disease in the great book of nature, at the bed-

side in private practice and in the wards of the hospitals. Thus, to him, nearly every disease treated of presented itself in the form of individual cases which had come under his notice or had been under his immediate care. From this great treasury of knowledge he continually drew in illustration of the subject matter of his lecture. Catching at the typical features of the disease, its pathological history and phenomena, its diagnosis, general and differential, were given with such clearness and force, that the student saw before him, as at the bed-side, all that was distinctive and important in the case, while the principles of treatment and its results followed with almost mathematical accuracy and precision.

As has been intimated, Dr. Pepper made no effort at oratorical display. The main object of his teaching was apparent—to give a thoroughly practical course—one, which, as far as was possible, would prepare his pupils for the intelligent treatment of disease. His enunciation was distinct, and his delivery rather a rapid than a slow one. No one could visit his lecture-room without noticing the marked attention of the class, nor be associated with the students without perceiving with what affectionate respect they regarded their preceptor.

Dr. Pepper occupied the chair of Practice, as has already been said, for a period of four years. Even when about to enter on its duties his health was feeble, and it was feared by many that it would not prove equal to the increased tax thus imposed on it. That by increasing his engagements already too numerous, and especially by compelling him to begin his visits at an earlier hour of the day, or to protract them to a later one, it may have tended to break him down, may perhaps be admitted, but, by himself, the professorship was never regarded as a burden. He has frequently been known to remark that to lecture was a relaxation to him, and that he looked upon the hour thus occupied as the most pleasant of his daily duties.

It is a remarkable fact, and in keeping with what has already been noticed, that during the whole four years of his professorship, a period the most exciting and important in our national history, notwithstanding the cares of a very large practice, and the infirmities of declining health, Dr. Pepper was never absent from a lecture, and never failed to meet his class punctually at the time appointed for its delivery.

Towards the close of the winter of 1863 Dr. Pepper's voice began to fail, and his increasingly impaired health became evident to himself and his friends. He was, indeed, one of the first to notice the change in his voice, and soon after determined to retire from the University. "I have a horror," said he to a friend, "of holding any place the duties of which I cannot properly perform—of being a drag to the College." Although assured that no one but himself could possibly regard him as such, he adhered to his resolution, and soon after tendered to the trustees his resignation of the chair he had so ably filled, and which was only accepted in the hope that a life so valuable to the profession and the community might thus be prolonged.

A month or two later he removed to his beautiful residence at Chestnut Hill, where it was fondly hoped in the pure air and complete rest of the country, and with the watchful care of his devoted family, he might find that health which had been denied him in the city.

In addition to the slight cough with which he had been affected for some years, Dr. Pepper at this time suffered greatly from attacks of dyspnœa, brought on by the slightest exertion, and occurring with great

violence at night. At best but a poor sleeper, these nightly attacks of oppression distressed him greatly and very much increased his debility. But as the summer advanced, they became less and less frequent, and his health so much improved that in October he determined to return to the city, and though not intending to engage in the active duties of the profession, he yet looked forward to an office and consultation practice. Such, however, was not to be the case. An attack of acute bronchitis brought on by exposure during a carriage drive, suddenly increased his oppression, and afterwards became complicated by the occurrence of hæmoptysis. Under the skilful care of his sons, both highly intelligent medical men, this was somewhat relieved, but on Saturday the 15th of October he was again attacked with hemorrhage, at this time of an alarming character. A few hours later he expressed to an intimate personal and professional friend, whom he had sent for, and who had been much with him during his illness, his conviction that his disease must soon prove fatal. With that wonderful accuracy of diagnosis which had always characterized him, he next directed attention to the state of his lungs, describing in detail the pathological conditions which he believed existed there, and which subsequent investigation proved to be correct in the minutest particular—the more remarkable, as no previous physical examination of his chest had been made, for although it had been suggested, he always seemed disinclined to have it done, and, as the event proved, his own sensations had been quite sufficient to reveal to him the real character of the ill-health from which he had been suffering. For this last attack the usual remedies were resorted to, and he became quiet and comparatively comfortable. In the afternoon another attack of hemorrhage occurred, after which he sank back exhausted, and remained in this state for about an hour, his breathing becoming less and less frequent, until he quietly passed away from earth, so quietly and so peacefully that his son, in whose arms he reclined, could not tell at what moment he ceased to live.

Thus at the early age of 55, Dr. Pepper died, just in the maturity of his mental powers and of his capacity for usefulness, at the very period when the arduous labors of a lifetime would have shown their best results, when the richest fruits of long study and ripe experience were about to be gathered, giving still higher honor to him, and greater benefits to the community. It was with him, as it has been and will be again, with so many others that we have to mourn, that the pale messenger makes his call and takes from among men those that can be most illy spared, and at the very time when their value is best understood and their loss most sure to be sincerely deplored.

He was interred in one of the most beautiful of all the charming spots to be found in the Laurel Hill Cemetery. Far above the waters of the Schuylkill, the views, up and down that romantic river, are of surpassing beauty. The ground all around his final resting place was familiar to him when enjoying the sports of boyhood, and not less in the happiest days of early manhood, having been for a long time the elegant and universally admired country seat of his family. His remains were followed to the grave by his late colleagues of the University, many of his professional brethren, and not a few of his grateful patients and admiring fellow-citizens who felt it a privilege to pay this last mark of respect to one who had so nobly and so usefully filled his place in life.

Over the massive block of enduring granite which covers what was

mortal of Dr. Pepper, rises the symbol of the faith in which he lived and died. A Christian, in practice as well as profession, he always preferred the works which illustrate such a faith, to the strongest declarations of belief, and he had little respect for the highest claims of religious experience where the visible fruits were wanting.

Wherever Dr. Pepper held public positions, so faithful was he in the performance of duty that his resignations were always received with sincere expressions of regret. The resolutions of respect and sympathy so generally adopted, at the time of his death, by the various societies and bodies with which he was connected, were only other evidences of how generally those who knew him most intimately had learned to appreciate his rare professional ability and his many noble traits of character.

Dr. Pepper had a delicate frame and was of a nervous temperament. He was about five feet seven inches high, and his weight rarely exceeded one hundred and thirty pounds. He was quick and active in his movements, had great industry, and applied himself with earnestness to whatever he undertook. During his life he had several attacks of illness, which, for the time, gave himself and his friends great uneasiness, but from which he always seemed to recover perfectly. Occasionally, when not well, he suffered very much from sleeplessness—for, even at ordinary times, as already remarked, he was a poor sleeper, and frequently spoke of this difficulty as one of the most trying of his constitutional peculiarities. At one time, probably owing to gastric derangement, he was for a long period very much annoyed by double vision, and to such an extent that walking in the streets was exceedingly troublesome, on account of the confused appearance of objects thus induced. No trifling indisposition, however, could keep him from the performance of his professional duties. It was only when he was suffering from severe illness that he was missed from the regular scenes of labor. He felt it a duty to practice his profession as long as he was able. If his great experience had enabled him to be of use to his afflicted fellow beings, he felt that he had no right to cease to do all he could, with justice to himself and his family, for their relief. It was this feeling, joined to the conviction that he would be much happier by such a course, that led him to decide—instead of abandoning his profession altogether, as his means would fully have justified him in doing—to render what professional service he could to his patients, had his health permitted him to return to the city.

Dr. Pepper had a remarkable faculty in inspiring the confidence of his patients. Exceedingly careful in his preliminary examinations, when he did express an opinion, it seemed very generally to carry absolute conviction of its soundness to those to whom it was addressed. The general accuracy of his diagnosis, the extreme rarity, certainly, of grave errors of this description fully justified this confidence. In the later years of his life his consultation practice was exceedingly large, and his professional brethren, who so often sought the benefit of his great skill, I am sure will bear me out in saying that his ability in the investigation of obscure disease was of no ordinary kind, and the subsequent complete verification of his opinions in such doubtful cases very often excited surprise, as it could not fail to inspire increased confidence. Gentle and rather retiring in his manners, Dr. Pepper was not profuse in his use of words in his intercourse with his patients, but he rarely failed to insure a conviction of his interest and sympathy, and to secure their faith in his prescriptions, as well as their lasting personal regard. Although an exceedingly pleasant and genial companion among his friends, he was very domestic in his habits, and

always looked upon his own home as the great and unfailing treasury of happiness.

Dr. Pepper was a laborious student in whatever he undertook to investigate, and his familiarity with medical literature was accurate and extensive, but he was so indisposed to make a display of his acquisitions, that his learning was much more varied and profound than ordinary acquaintances might have supposed. His writings were not voluminous. He always thought that the great object in medical writing should be to add to the accumulated knowledge of the profession, and from the time that he felt qualified to do his share in this great work, he was so fully occupied with his daily and steadily increasing professional duties, that it would have been difficult for him to have prepared any very extended original work, even had he felt so disposed. He was, however, a frequent contributor to the medical journals, and as might have been anticipated, these articles were distinguished by brevity, clearness of expression, and an eminently practical character. Among these, will be found Clinical Reports of Cases noted in the Pennsylvania Hospital, in the *American Journal of the Medical Sciences*, vol. vi. October, 1843; on Chronic Hydrocephalus, in the *American Journal of Medical Sciences*, vol. xx. Oct. 1850; on Scrofulous Inflammation of the Lungs and Pulmonary Condensation, *American Journal of Medical Sciences*, vol. xxxii. 1852; on Hepatic Abscess, *American Journal of Medical Sciences*, vol. xxi.; on Tubercle of the Brain, with Remarks, *Medical Examiner*, vol. xii. new series; on the Treatment of Intermittent Fever by Quinoidine, *Medical Examiner*, vol. x. new series; Poisonous Effects produced by Pork, *Medical Examiner*, vol. i. first series; Coup de Soleil, and Pseudo-membranous Croup, in the *Transactions of the College of Physicians*, vol. iii. 1850; Bebeerin and Cinchonia in Intermittent Fever, in the *American Journal of the Medical Sciences*, vol. xxiv. 1862; on the Use of the Spirometer in Diseases of the Lungs, in *American Journal of Medical Sciences*, vol. xxv. 1862; a Grain of Coffee in the Air-passages Fatal after being retained three years and a half, *American Journal of Medical Sciences*, vol. xx. Oct. 1850; Cases of Diseased Gall-bladder, *American Journal of the Medical Sciences*, vol. xxxiii. Jan. 1857, besides which he published several other cases in the Proceedings of the Pathological Society, and also reviews of different publications in the *American Journal of the Medical Sciences.*

It is difficult for one who, during more than thirty years, had the privilege of intimate personal friendship and the advantages of the most confidential professional intercourse, to attempt to do justice to the private virtues and public character of a man like Dr. Pepper, without feeling how much must be omitted in a memoir like this, that would tend to illustrate still more strongly the goodness and purity of his life, and the reality of the sense of irreparable loss felt by many who have been accustomed to lean on him as a trusted counsellor and friend in the saddest periods of sickness and sorrow. And yet without knowing all the grounds for feelings like these, no one can thoroughly appreciate all his excellent traits of character, as a Christian man, a good citizen, an able physician, a devoted husband and father, a true friend—nor understand what tended to raise him highest in the estimation of those who knew him best, as one of the justly honored and deservedly successful in the ranks of our noble profession, and who, in passing from amongst us, has left a void which to many can never be filled, feelings of sorrow that can find no fitting expression, and that sense of private grief, that, with all its sacredness, ever shrinks from public exposure.

1865. *Dec.* 6. *Case of Strangulated Hernia.*—Dr. John Ashhurst, Jr., read the following account of a case:—

William J. McCann, an Irishman, thirty-eight years of age, an operative in a cotton factory, was admitted to the Episcopal Hospital on the morning of Thursday, August 17, 1865, suffering from strangulated inguinal hernia of the right side. He stated that he had been ruptured six years previously by a strain caused by the stumbling of a horse which he was riding, and that his hernia had since come down at varying intervals, but had always hitherto been easily replaced. He had never worn a truss, and had sometimes been several months without any re-descent of his hernia. His right thigh was shortened and distorted, the result of disease of the bone in early life.

The hernia came down early on the morning of August 14th (Monday), and for the first time could not be replaced. He continued to work, however, during Monday and Tuesday, though suffering on the latter day from a great deal of pain and griping about the umbilicus. On Wednesday he sent for a physician, who made an unsuccessful attempt to reduce the hernia, and then left him, merely directing a purgative dose of magnesia. On Thursday he was brought to the hospital, where I found him at my morning visit of that day. At that time his skin was cold, his pulse feeble and rapid, his countenance shrunken, and his features pinched and anxious. He had been able to retain nothing in his stomach since Monday, rejecting absolutely everything by vomiting. He complained of intense and constant griping in the umbilical region, but was perfectly rational and anxious for operative relief.

Inspection of the groin showed a small tumour, red and excessively tender, immediately above Poupart's ligament on the right side, and which evidently contained a knuckle of intestine in a state of deep congestion if not positively inflamed.

The patient being thoroughly etherized, I resorted to the taxis for a few moments and with great gentleness, when, finding the hernia irreducible, I immediately proceeded with the operation as usually performed. Having divided all the tissues, except the hernial sac, I found that though the tumour could now easily be returned into the abdomen, the constricted bowel could not be emptied of its contents; in fact, that if the operation was terminated at this point the strangulation would continue, though the hernia were reduced. I, therefore, at once laid open the sac, and divided its contracted neck, when all evidences of constriction disappeared.

The bowel was darkly discoloured in one or two spots, but not to such an extent as to induce me to hesitate about returning it to the abdominal cavity. The lips of the wound were then accurately adjusted by means of the interrupted suture of lead wire, and supported by a light compress and bandage. Half a grain of acetate of morphia was administered by hypodermic injection, and the patient thus kept quiet after the effects of the ether had passed off.

His diet was directed to be limited for a few days to a teacupful of milk every two hours. His bowels were opened by an enema the afternoon of the following day, and his urine drawn off by a catheter at stated intervals as long as it was necessary.

This man recovered rapidly and without a single unfavourable symptom, the incision being entirely healed on September 11th, and the patient leaving the house a week later quite well.

With regard to the question of opening the sac in the operation for

strangulated hernia, I should, of course, prefer to avoid this additional risk if it could be done with safety. And hence in a case where strangulation had existed but a short time, if I found on reaching the sac that the bowel could be emptied of its contents and rendered perfectly flaccid by slight pressure, I should consider it proper to return the sac unopened, believing that the prospects of recovery would be thus improved; but in the opposite contingency, and generally in any case of doubt, I should think it much safer to lay open the sac, knowing that after all, death following this operation is very seldom due to the operation itself, but rather to the condition of things preceding.

I have added a table giving a record of all the cases of strangulated hernia treated in the hospital from its opening to the present time, for which I am indebted to Dr. Bodine the present senior resident surgeon.

An analysis of the following table shows that of twelve cases three were under forty years of age, five between forty and fifty, and four over sixty; nine were males, and three females; six were natives of this country, and six foreigners; three were single, five married, and four widowed; four recovered, and eight died, one of the latter being in such a condition when admitted as not to permit any operation.

The average residence in hospital of those who recovered was $53\frac{1}{4}$ days; of those who died $5\frac{3}{8}$ days; of those who died after operation $5\frac{2}{7}$ days.

The occupations of these patients were so various as not to justify any inference as to the effect the nature of a person's employment might exercise as a predisposing or exciting cause of the disease.

No doubt many if not most of the fatal cases in the above table would have recovered had the operation been resorted to at an earlier period; and it is a matter of regret that every physician should not feel himself competent to operate in any case the moment strangulation occurs, instead of temporizing, as is too often done, until the disease has so far advanced as to render the most skilful operation of no avail.

*A tabular view of twelve cases of strangulated hernia treated at the Episcopal Hospital.*

| No. | Name. | Age. | Sex. | Nativity. | Conjugal state. | Occupation. | Date of Entrance. | Result. | Date of discharge. | Days in Hospital. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | William Scholscher | 50 | M. | Germany | Widower | Labourer | July 8, 1854 | Recov'd | Sept. 9, 1854 | 54 | |
| 2 | Frances Johnson | 76 | F. | Ireland | Widow | Teacher | Sept. 9, 1856 | Died | Sept. 16, 1856 | 7 | |
| 3 | Robert Trotten | 70 | M. | Ireland | Married | Weaver | Oct. 3, 1856 | Died | Oct. 9, 1856 | 6 | Artificial anus had formed before admission, therefore no operation. |
| 4 | James Flood | 32 | M. | Ireland | Married | Dyer | April 14, 1857 | Died | April 25, 1857 | 11 | |
| 5 | Elisha Cunningham | 45 | M. | U. S. | Married | Machinist | Dec. 29, 1858 | Died | Jan. 3, 1859 | 5 | Died from peritonitis. |
| 6 | Elizabeth Hammel | 44 | F. | U. S. | Widow | Nurse | Dec. 13, 1859 | Died | Dec. 19, 1859 | 6 | Strangulation had lasted five days; bowel gave way four days after operation, and feces passed by wound. |
| 7 | Thomas Dunlap | 40 | M. | Ireland | Married | Weaver | April 19, 1860 | Died | April 21, 1860 | 2 | |
| 8 | Josiah Weeks | 43 | M. | U. S. | Single | Shoemaker | July 20, 1860 | Died | July 21, 1860 | 1 | |
| 9 | William Patterson | 25 | M. | U. S. | Single | Waterman | Jan. 4, 1862 | Recov'd | Feb. 2, 1862 | 29 | |
| 10 | Peter Appleton | 68 | M. | U. S. | Married | Wheelwright | Jan. 9, 1862 | Died | Jan. 14, 1862 | 5 | |
| 11 | Mary Ann Burch | 62 | F. | U. S. | Single | Nurse | Sept. 26, 1863 | Recov'd | Jan. 2, 1864 | 98 | Hernial sac not opened. |
| 12 | William J. McCann | 38 | M. | Ireland | Widower | Operative | Aug. 17, 1865 | Recov'd | Sept. 18, 1865 | 32 | |

1866. *Jan.* 3. *Strangulated Hernia.*—Dr. PACKARD related two cases of strangulated femoral hernia, illustrating the importance of an operation being performed sufficiently early.

CASE I. Nancy Stoddard, æt. 49, was admitted into the Episcopal Hospital December 20, 1865. She was in good general condition, but had a tumour in the left groin, tender but not painful. This tumour had first appeared after she had made a violent effort one week before, since which time her bowels had not been moved. She was said to have had stercoraceous vomiting, but this was not certainly known. She was herself of rather feeble intellect, and the history given of her by her friends was somewhat vague. Two physicians had seen her, and made attempts at taxis, but had only succeeded in bruising the skin, which was discoloured, and, as before stated, tender.

On the evening of her admission she had some vomiting, thought by the nurse to be stercoraceous, but not decidedly so. Two injections were given her; the first brought away some scybalous masses, the other came away unchanged.

On the 21st I examined the case with my colleague, Dr. S. Ashhurst. We had just decided to wait for twenty-four hours before interfering, in view of the patient's general good condition and the doubtfulness of the history and local signs, when decidedly stercoraceous vomiting occurred, and I at once proceeded to operate.

An incision was made along the most projecting part of the swelling, and the layers successively divided until we reached the sac, which was greatly distended, and closely resembled bowel. Dividing this very carefully by successive cuts on a director, we were at length met by a gush of dark reddish grumous liquid with a slightly fecal odor.

Laying the sac open freely, I found a loop of intestine, very much congested, constricted at the femoral ring. On dividing Gimbernat's ligament inwards, with a Cooper's knife, to the extent of about one-quarter of an inch, I returned the bowel without difficulty. The wound was sponged out and closed with five wire sutures.

The patient was at once placed under the use of opium freely, both by mouth and by suppository. The dressings were soon soaked with a thin yellow stercoraceous liquid like that vomited previously, and this continued to flow until shortly before death, which took place in about ten hours. Air also passed occasionally through the wound. From the time of the operation, which was done with the aid of ether, nothing was retained by the stomach.

On opening the abdomen, the strangulated knuckle of intestine, a portion of the ileum, about three feet above the caput coli, was at once seen. The pelvis was full of thin fecal matter, which had escaped from the bowel by an opening a few lines above the point of constriction. Signs of commencing peritonitis were everywhere visible.

My own idea is that the long continued strangulation had so weakened the tissues that they gave way as soon as peristaltic motion was renewed, and that an operation six or seven days sooner would have saved the patient's life.

CASE II. The other case alluded to was that of Mrs. Duffy, æt. 60, who came under my care in the absence of Dr. Norris, November 12, 1862. She had been attacked three days before with symptoms of strangulation in a hernia which she had had for fifteen years. Her bowels became at once obstinately costive; she had some pain in the upper part of the

stomach, and nausea and vomiting ensued. Some of the matters ejected were stercoraceous. Attempts at taxis were made without success.

When I saw her the tumour was about as large as a hen's egg, firm, but slightly movable, and painful only when pressed upon. Her pulse was quick and not very strong, her nausea constant; the tongue was covered with a dirty fur.

With the assistance of Drs. Boker and Wurts, she was thoroughly etherized by Simpson's method, and the taxis was again attempted, but in vain. I therefore proceeded to operate by cutting down obliquely over the most prominent part of the tumour. A small artery, probably the superficial epigastric, required ligation. Several successive layers of tissue were next divided, the hernial protrusion was reached and found to be femoral. The constriction was quite firm and seated just at the ring. Gimbernat's ligament was nicked in two places, a few adhesions broken up with the finger-nail, and the protrusion returned. It consisted simply of a knuckle of intestine. The wound was immediately closed with sutures and cold water dressings applied. She was ordered gr. ij of opium every six hours.

*Nov.* 13. Pulse 80; skin good. No vomiting or pain since the operation.

A day or two after there was a slight erythematous blush about the wound, which soon disappeared under the use of an ointment of oxide of zinc.

15*th.* She had a free alvine evacuation without pain.

18*th.* The sutures were removed, the wound having closed except at the point where the ligature was attached.

The ligature came away a day or two later, and the case presented no further symptoms worthy of record. I believe that the result would have been far otherwise had the operation been put off until the local symptoms became more urgent, and that the rule in all cases should be to interfere with the knife at once when strangulation exists and the taxis cannot be successfully employed. Nor should attempts at the taxis be carried on too long, for the bruising of the parts may be such as to influence very unfavourably the ultimate issue of the case. In the instance first mentioned it may be fairly supposed that an earlier operation would have saved the patient's life.

*March* 7. *Abscess of Brain.*—Dr. Levick made the following remarks:—

On Friday, Feb. 9, 1866, Mr. W. (æt. 40) called at my office and left word for me to visit him during the day. I found him, a few hours later, in his chamber, complaining of pain in his head, and of what he termed "biliousness." He subsequently told me that he could see but one-half of my face, and on holding up my hand, that only one-half of it could be seen by him, the other half being replaced by a dark line. This occurred equally when one eye was closed or when both were open. The pupils responded naturally to light, and the pulse was 70. He had attended to his usual business, that of a musician by night and a shopkeeper by day, until the morning of my visit. On the preceding night he had played with the band until 2 o'clock A. M.

A careful investigation disclosed the following facts: On the 9th of May, 1865, he hurt his head by the falling of a bed-canopy; this did not amount to much. On the 29th of June a window-cornice fell and stunned

him. In July and August he occasionally had headache and unusual drowsiness, so much so that while performing at the park he would often fall asleep as soon as he had finished his part, between the pieces of music. Six weeks before calling on me he at times felt giddy, so much so that in one instance, while walking the street, he had to hold on to the lamp-post to keep from falling. On several occasions, when arranging goods on the shelves in his shop, he would brush his hands over his forehead and say he was giddy, or, to use his own words, was "drunk without having drunk anything." Yet these symptoms were so slight as to have excited no uneasiness, and had left so little impression that they were only elicited by a rigid examination. During the entire winter he had been engaged with his band three nights of each week, and had played at all or nearly all the various balls given at the Academy of Music. It may be further stated that he was a man of very temperate habits, and that nearly all of his family had died of consumption.

Pain in the head and imperfect vision, with some slight gastric derangement, were the troubles complained of at my first visit. These symptoms continued, the pain in the head at times intense, at others almost entirely absent. A heavily-coated tongue, and a taste as if turpentine were in the mouth, were next noted. The patient walked about his room until the morning of the 19th, though complaining of intense pain in the head, and said his head felt as if it were as large as a bushel. There was no undue muscular rigidity, no paralysis, no convulsion, no aphasia, and the mind was perfectly clear until a few hours before death, so much so that on the morning of the 19th, one day before he died, he recollected that the policy of insurance on his house had that day expired, and gave directions for its renewal. During the latter part of this day there was some mental obscurity, with lucid intervals. Late in the evening he called his wife to him, kissed her affectionately, and gave directions about his child. A few hours later he became comatose, and died at 6 A.M. of the 20th ult.

The *post-mortem* examination was made fifty-six hours after death. The brain only was examined, and is now presented to the College. The subsequent notes are those of Dr. William Pepper, Jr., by whom the examination was carefully conducted.

*Post-mortem appearances, Feb.* 22, 1866, *fifty-six hours after death. Brain only examined.* By Dr. William Pepper, Jr.—The vessels of the dura mater and arachnoid much gorged with blood; membranes on the convexity of the brain smooth, though in some places opaque and thickened; no effusion at the base. On removing the brain, the various structures at the base of the brain were all much softened and discoloured. On making incisions into the brain, an abscess was found in the anterior lobe of the left hemisphere, and a second one in the posterior lobe of the right. The one in the left hemisphere was small (about the size of a hickory-nut), the tissue around it much softened, and the abscess not surrounded by any well-marked wall. The contents, microscopically examined, were imperfect pus-cells, granule-cells, and granular matter. The abscess in the right hemisphere bulged the arachnoid out, it was so superficial, and was of much larger size than the other, measuring an inch and a half in diameter. It was inclosed by quite a firm wall consisting of condensed connective tissue, the spindle-shaped cells very large, and was lined by a layer of tenacious lymph. Its contents were purulent, identical with those before mentioned. The ventricles did not contain

much fluid, but each was lined by a layer of consistent, whitish-yellow inflammatory lymph. The nerve structure, in all parts excepting the more central portions, was in a state of white softening. No tubercle-corpuscles were seen.

*Etherization.*—Dr. PACKARD called attention to the subject of anæsthesia by sulphuric ether in the following remarks:—

In May, 1865, I brought before the College[1] some statements of Dr. Lente, of Cold Spring, N. Y., as to the small quantity of ether required to produce anæsthesia, if given in a certain way. I have since had numerous opportunities of testing the accuracy of Dr. Lente's views, and although I have not succeeded in obtaining as complete insensibility as he has in so short a time or with so small an expenditure of ether, I believe his idea is very valuable in the saving of that expensive article. The great point is to have in the inhaler as little substance to absorb the ether, compared with the surface of evaporation, as possible. Hence a thick sponge is very wasteful of ether. A very thin towel or handkerchief, fitted inside of a cone of newspaper or pasteboard, answers extremely well. A small quantity only of ether should be put in at a time, and this should be *dashed* in, so as to spread out and evaporate readily. No fear whatever need be entertained of bad consequences from the inhalation of pure ether vapor (as nearly as we can give it), unless the patient is the subject of serious thoracic disease, or is very old and feeble. In this latter case, I believe I have seen pulmonary apoplexy brought on by the prolonged administration of ether.

*May* 2. *Fatal Peritonitis from Perforation of the Appendix Vermiformis.*—Dr. A. D. HALL exhibited to the College a specimen, with history, obtained from a patient of Dr. Corse, of this city, at whose request the examination was made.

Mrs. S., aged 25 years, of slender frame and rather delicate health, the mother of two children, the youngest four months old, both of whom she had been obliged to wean soon after birth, from want of nourishment, had complained for one or two weeks chiefly of languor and debility, when she was attacked, on the 10th of March, with severe pain in the lower part of the abdomen, followed by nausea and vomiting. The pain continued during the two following days, but had somewhat abated on Tuesday, the 13th, when she ate a piece of chicken, after which it became greatly aggravated and the vomiting still more incessant. On Wednesday, the case having assumed a more serious aspect, her husband, himself a physician, sought other counsel. At this time her pulse was 140, abdomen extremely tender on pressure, bowels obstinately constipated and somewhat tympanitic, and the stomach extremely irritable. She lay upon her side, with her legs drawn up, and had an anxious, distressed countenance. There was no tumour or other indication of hernia to account for the symptoms, and the disease was at once recognized as peritonitis of the most general and dangerous type. The usual remedies for peritonitis were employed without effect, and the patient died on the 15th of March.

*Inspection, fifteen hours after death.*—The body preserved in ice; rather a small, spare figure, face thin, surface of abdomen marked with leech-bites and the effects of a blister. Small amount of fat in the abdominal

[1] See p. 144.

parietes. Half an ounce of fluid pus was found in the interspace between the stomach and liver. The folds of the mesentery and the convolutions of the intestines were glued together by easily separated lymph. About six ounces of brownish turbid serum were found in the pelvic cavity. The results of inflammation appeared, however, most marked in the right iliac region, and hence arose a suspicion of perforation of the intestine in that neighbourhood. On a careful examination, a perforating ulcer of the appendix was found, through which a grooved director could be passed, communicating freely with the peritoneal cavity. The perforations were two in number. The first was one inch from the caput coli; the muscular coat of the bowel appeared to have been destroyed by ulceration, and then the peritoneal coat had given way in three small openings one-sixteenth of an inch in diameter; these were arranged in a triangular manner. The second was a solitary perforation an inch and a half from the end of the appendicula. The mucous membrane of the process appeared to be extensively ulcerated, and in places presented the cribriform appearance not unfrequently found in the intestinal tract of patients dying of Bright's disease. Although thick patches of lymph had been thrown out in separate deposits, still no attempt by nature to limit the effusion of foreign material by lymph barriers was discoverable. There was nothing to show that any foreign body nor that any impaction of feces had been the origin of the lesion, although the material, if such had been the origin of the mischief, might readily enough have escaped into the cavity of the abdomen.

Perforation of the appendix is not at all a rare occurrence. Numerous cases of it may be found in the *Transactions of the Pathological Society of London*, and in the various journals, domestic and foreign. The presence of foreign bodies as a cause of ulceration and perforation was probably the most generally received opinion; but in thirteen cases under Prof. Leudet's[1] observation, six were consecutive upon phthisis pulmonalis, and in no case under that author's notice was the perforation the result of typhoid fever. In the case laid before the College there was no suspicion of either typhoid or tubercular disease.

1866. *June* 6. *Pyæmia.*—Dr. Hamilton reported the following case: On Wednesday morning, Jan. 10, 1866, I was requested to visit W. S., aged 14 years, rather large, and of fine, healthy appearance. On inquiry, I learned that on the previous Saturday he was engaged nearly all the afternoon in skating; that he became very cold soon after going upon the ice, and so continued; that he had three or four rather hard falls, and returned, perfectly chilled, to his home. The subsequent morning, Sunday, the 7th, he began to complain of general soreness and aching, slight pain in the head, and alternate sensations of chilliness and fever. On the 8th, an eruption over the surface of the body was superadded to the symptoms of the previous day. On the morning of the 9th he felt much better; but in the afternoon he was worse, the fever and general malaise being a good deal increased, and during the night he complained of a very severe pain in the right groin.

When I first saw him on the morning of the 10th, he was confined to bed, and complaining of very severe pain in the groin and slight headache. Fever, not very active; the rash was still very distinct, and re-

[1] Pathological and Clinical Researches regarding Ulceration and Perforation of the Appendix Vermiformis, Archives Générales, Août, Septembre, 1859.

sembled precisely what is seen in scarlatina, though no other symptom of this disease was present; some indistinctness of speech was also noticed. The groin, on pressure, was very tender and slightly swollen, the swelling diffused, rather than circumscribed. On the 11th I learned that he had been quite delirious during a part of the night, and that certain spasmodic twitches, to which he had for the past five years been subject, had occurred since his illness more frequently than usual. These movements were confined chiefly, or exclusively, to the upper extremities, the head, and features of the face, and consisted in a sudden retraction of the head, distortion of the eyeballs, retraction of the corner of the mouth to one side, and elevation of the arms, violently extended, above the head. Medical treatment, directed to the upper part of the spinal cord, as the probable seat of this affection, had long ago been tried, without benefit; but, as his health and intelligence were good, no attention had latterly been given to it. The groin was rather more painful and swollen than the day before; rather more fever; rash disappearing, but several reddish blotches were noticed upon the right elbow. On Friday the pain in the groin was nearly gone, but the ankle of the left limb had suddenly become very painful, some swelling of the joint was noticed, and a large red, ovoid blotch occupied about two square inches of the skin nearly two inches above the external malleolus. There was a scab, just below the ankle, twice the size of that of a fully developed vaccine pustule, with matter beneath, caused by the pressure of a boot; speech more imperfect; delirium the previous night very great; efforts to leave the bed almost incessant; slight delirium during the day. On the 13th, 14th, and 15th the symptoms the same as on the 12th, but the pain near the ankle was more intense, and so much delirium that it was almost impossible to keep the patient in bed. On the 16th, rather less fever, less delirium during the night, not quite so much pain at the ankle, but rather more in the groin, with increased swelling, extending somewhat into the thigh; desire for food nearly gone. 17th and 18th, same condition as upon the previous day.

On the afternoon of the 19th a severe chill occurred, followed by great nervous irritation, high fever, and great general suffering. It may here be incidentally stated that mustard plasters, applied after the chill to the inside of the legs, produced at the time but a moderate degree of redness, which faded on the second day; and yet on the next Friday, just one week from the time of application, full vesication took place. 20th, high fever, very delirious, but at times answers quite well; increased difficulty of articulation. On the 21st a swelling was observed on the right elbow, where the blotches had previously been seen, and on examination of the left ankle the same thing was found to have occurred; the swellings in both places evidently contained fluid. A third swelling, similar in character, was discovered in the right iliac region, a few inches above the groin. A slight perspiration, the first seen, appeared upon the forehead, face, and neck. On the 24th a crackling of the knee-joints, on motion, was distinctly heard at some distance from the bed; great aversion to food.

From Jan. 25 to Feb. 3 his situation was somewhat similar to that of the few previous days; always more or less delirium, night and day; sweat confined to the head, and upper part of the trunk; an extraordinary crackling on movement of the knees, ankles, thighs, wrists, elbows, shoulder-joints, or neck, loud enough to be heard in any part

of the room. Feb. 4, the skin over the swelling near the left ankle is becoming quite dark and mottled; the patient no longer draws up his legs, either from want of power or from fear of increasing his suffering; the right groin and thigh still swelling, and more painful; some complaint of the left groin, which is somewhat tender and slightly swollen; the abdomen is also slightly swollen, has in fact been so for some days past. 8th, the feet have during the past few days become œdematous; and on the 9th the urine was tested, and found to abound in urates. 10th, less swelling of the feet; patient has for two or three days and nights past sat in an arm-chair, resolutely refusing to be moved; cannot at present bear the slightest movement of either of his lower limbs. 11th, the swelling upon the right elbow broke, and discharged thick pus. 12th, swelling of the feet nearly gone; thigh still growing larger, with increasing pain; slight increase of appetite; in the afternoon fainted, apparently caused by suffering and the long-continued upright position; the crackling of the joints continues, but is not so audible. The 12th, 13th, and 14th showed no important changes. On the 15th the abscess near the left ankle broke, and discharged freely. On the 17th the abscess ceased discharging. Pulse is now becoming a good deal weaker and more frequent, and patient shows less muscular strength.

On the 19th it was evident that an immense abscess was forming in the right thigh. A swelling of considerable size was also discovered upon the right nates, not far from the anus, its surface much abraded and ulcerated; and now, for the first time, a shortening of the left leg was noticed, and the foot inclined inwards in a manner that had not been observed before; no appetite, and flesh wasting rapidly; has consented, after much persuasion and threatening of the serious consequences to himself of a refusal, to be replaced upon his bed. On the 23d matter was found discharging from the swelling upon the nates, showing the existence of another abscess; right thigh enormously swollen, pain extreme.

On the 26th the abscess of the thigh broke, and discharged in a very short time some pints of matter. On the 3d of March a small swelling, similar to the others, was found upon the right wrist; the abscess upon the abdomen, circular in form and about three inches in diameter, seems disposed to flatten and shrink; debility rapidly increasing; much œdema of both limbs, from the groins to the toes. On the 10th the abdomen had become quite tympanitic, and the œdema greatly increased On the 14th, 15th, and 16th fever was very high, and on the 17th erysipelatous inflammation, commencing at the orifice of the abscess in the right thigh, spread with great rapidity downward to the knee, and upward beyond the groin to the distance of several inches upon the abdomen. On the 18th the inflamed surface became quite dark, simultaneously with collapse; and on the 19th death terminated the most painful attack of disease, duration considered, that it has been my lot to witness.

No autopsy was made, but, on examination, the left thigh was found to be dislocated at the hip-joint, the result, doubtless, of an abscess within the joint, destroying the ligamentous connections, although but little pain was at any time referred to this region.

We have preferred thus to relate the actual progress of this remarkable case, without embarrassing or unnecessarily extending the account by an intercurrent detail of treatment, which did, in fact, little more than afford partial relief to the excruciating and persistent suffering to which the patient was doomed. The case did not at first present any sufficient

grounds for anticipating the scene of anguish and death that was at so remote a period to ensue. The primary symptoms were nothing more than we often see as the consequence of long-continued exposure to cold, and the pain in the groin, complained of at first, was thought to have been produced by strain of the part whilst skating, or perhaps at the time of falling upon the ice. The sudden and almost entire disappearance of the pain from the groin, and its equally sudden reappearance within twenty-four hours, at or near the left ankle, suggested the idea of rheumatism. When, however, the skin at the seat of pain was found to be already inflamed, and the scab, with its subjacent pus, was discovered below the ankle, doubts once more arose as to what might be the future course and issue of the attack. Again, the delirium was of extraordinary character and violence, and seemed to be in no just proportion with the other general symptoms or local affection, and this circumstance, taken in connection with the oft-recurring spasmodic movements to which he had so long been subject, tended still further to embarrass the diagnosis, by suggesting violent irritation or inflammation below the base of the brain as the most rational solution of some of the more prominent phenomena observed. The symptoms, in part, bore so strong a resemblance to what has been seen in some cases of cerebro-spinal meningitis, as at one time to lead to the suspicion that this might be the real malady, complicated with local phenomena occasioned in the manner before intimated. When, at length, it became evident that deposits of pus existed beneath the swellings upon the right elbow and left ankle joints, we could no longer doubt the existence of pyæmia, complicated though it might be with a diverse pathological condition.

The treatment before the development of pyæmia was moderately antiphlogistic, yet supporting, and requires no detail. Subsequently the medication and alimentation were, so far as practicable, tonic and restorative, quinia and iron being the principal medicines employed for this purpose. Morphia had to be freely given, and was the chief agent in procuring some respite to the excruciating pains endured by the patient.

A question of much interest in this case is in reference to the cause of the pyæmia. Had the chilliness, fever, headache, and malaise of the first day of the attack their origin in a then developing pyæmia? or was the latter subsequently engrafted upon a disturbed condition of the organism (produced by long exposure to cold), and had its origin in an accidental circumstance, such, for instance, as the purulent scab spoken of? or can such a change in the condition of the blood, from intense cold, arise, as, conjoined with bruises from falling, may have an agency, when occurring in an already disturbed state of the system, in engendering pyæmia?

*Oct.* 5. *Deformities after Disease of the Hip-joint.* (With five woodcuts.)—Dr. H. Lenox Hodge called the attention of the Fellows of the College to some cases of deformity after disease of the hip-joint, in the following remarks:—

The ordinary deformity in bad cases, especially when badly treated, or left to themselves, is familiar to all. We see every day such children moving, as best they may, upon crutches, with the body erect, but the affected limb drawn forward and upward, away from the ground; not only useless, but liable to various injuries from its prominent position. If such a limb be examined, it will be found small and wasted. The mobility at the ankle and knee is usually normal, while that at the hip-

joint is partially or oftentimes totally lost. On the outer or inner part of the thigh, in the groin or in the sacral region, depressed scars will usually be seen, marking the location of old abscesses. If the interior of the joint be looked at after death, the bones of the pelvis and the femur may be found firmly united by bony union either at the acetabulum or some abnormal position; or else the cartilaginous surfaces merely roughened, and fibrous bands existing within or outside of the capsular ligament, and the muscles, on the front and inner part of the thigh, especially the sartorius, biceps, and adductors, strongly contracted; or at times the joint itself but slightly changed from its normal condition, and the position of the limb entirely due to the contraction of the muscles.

Sometimes not only one but both hips have gone through the same disease, and a similar deformity cripples both limbs. Now the child cannot stand erect, and only after much practice can balance himself in a squatting position. Crutches are of but little service to him; few of those thus deformed can learn to use them. In this plight they hide themselves in some dark corner, or learn to crawl about upon their hands and feet. A few, after much effort, acquire the power of walking slowly and awkwardly when aided by their hands placed on a chair which they push before them; or else by their hands placed upon their knees. If one limb be much shortened by displacement of the head of the femur, or if the thigh and leg have assumed some unusual position from long-continued habit, the compensating deformities in other parts of the body are very varied, and the attitude of the child in standing, and the efforts at walking, strange and pitiable.

I have had photographed a few of such cases which have come under my observation at the Children's Hospital, and elsewhere.

Case I. John Henry Bryant, aged 12 years. One day, while visiting a child with club-feet, I saw a bright face in an obscure corner of the room, and upon asking, Who is that? the mother replied, "It is another of my cripples: nothing can be done for him; he hates to be seen, and hides himself away during the day." When this child was only two or three years old, inflammation of the hip-joints had begun, and, passing through its stages in both hips, had left him thus deformed. A deep scar will be seen upon the outer part of the thigh; both thighs were in the same line, and at right angles to the body, in which position they were firmly fixed. The mobility at the knee and ankle-joints was greater than normal; and the muscles of the forearms, arms, shoulders, and chest, exceedingly developed. This resulted from his mode of standing and of walking. When he stood, he placed his hands upon his knees, so that his legs, arms, neck and head, were in a straight line, and represented his height. In this way he substituted his arms for his thighs and spine, and thus removed all his weight from the hip-joints. In this attitude he could slowly move across the room by raising himself on the balls of his feet, and then bringing one leg in advance of the other simply by the movement at the knee, as is shown in Fig. 1.

Case II. William Arthur Johnson, aged 13 years. Scars and fistulous openings are seen upon the thigh and groin of the right limb. The left was perfectly sound, except that, owing to the peculiar position which he was so often forced to assume when he stood, there was great relaxation of the ligaments around the hip-joint, and great mobility there. The right hip-joint, however, was perfectly rigid, and the limb turned out

from the median line, the foot being extremely everted, and the thigh much drawn upward, so that it was at right angles to the body. When

Fig. 1.

Fig. 2.

aided, he could stand erect upon the sound limb, and then the right foot would hang at about a line with his left knee, and the right knee, on a line with the pelvis, would project at the right side. This deformity resulted from his having been allowed, while in bed, during the long period of suppuration, to draw the thigh up, and let it fall upon its side. His position, when standing unassisted, was as seen in Fig. 2; the sound limb nearly vertical, and the body inclined to the right toward his deformed and everted limb, receiving support from the right arm, with the hand on the knee. He could thus, for a short distance, make some attempt at an awkward walk by swinging the deformed limb around in front of the other, thus causing him to face to the left; then carrying the sound limb forward, and then repeating the swinging movement.

Case III. Charles Hancock, 7 years. In this case both hip-joints had lost all their mobility. The thighs were drawn up toward the body, and adducted so that the knees nearly touched each other. He could not stand alone, but with the aid of his hands resting on a chair, could hold himself in an erect position. Fig. 3 represents him in this position, and exhibits very well the concavity in the lumbar region of the spine, common to all such cases, and compensating, to a certain degree, for the angle which the thighs make with the body.

Case IV. John Stitt, aged 12 years. With him some slight motion was still retained at both hips, but both had been long inflamed. His thighs were drawn up toward the body, and the deformity was very similar to that of Charles Hancock. Fig. 4 is of interest in showing how these poor children move from place to place; how they walk, or rather crawl. The spine, it will be noticed, is perfectly straight in this

position. The curve above alluded to depends simply upon the position. The spine attains great flexibility, but does not become deformed.

Fig. 3.

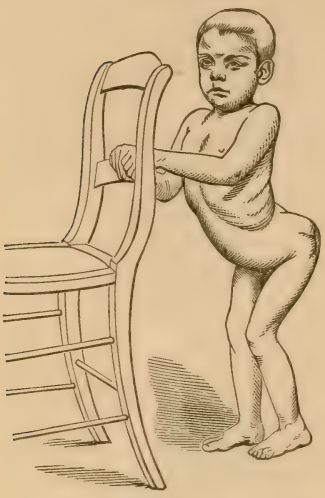
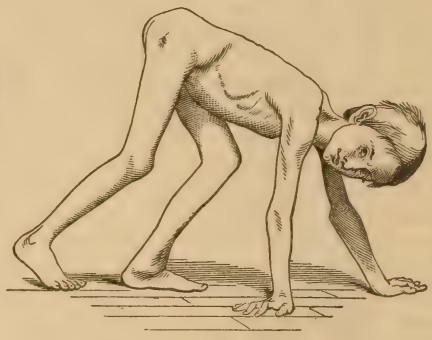
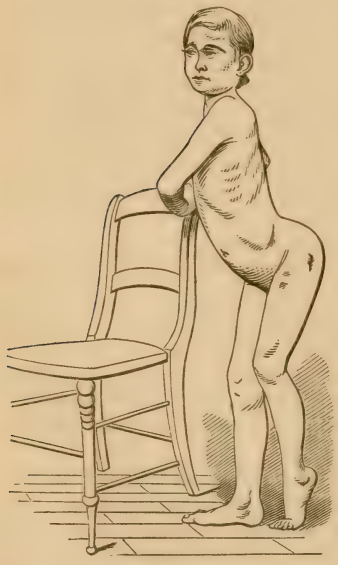


Fig. 4.



Case V. Samuel Ragan, 12 years. He had the right hip sound, but the left hip deformed. As he stands (see Fig. 5), the concavity of the lumbar region, throwing the dorsal portion of the spine far in advance of the buttocks, exhibits the deformity, which is really due to the hip-joint. This curvature of the spine and pelvis enables him to bring the thigh nearly to the vertical line, and parallel to its fellow. The limb also is much shortened, as is seen by the knee being higher than that of the opposite side, and by his standing on the toes instead of the sole of that foot. In this way, not only did he stand, but also was able to make some movements as in walking.

Fig. 5.



The deformity in such cases as I have presented to you, increases with age. The limb, long held in an unnatural position, and seldom or never used, is slightly nourished, and soon ceases to grow with the rest of the body; the muscular tissues waste away, and lose their peculiar function of contracting at will. The fibrous bands formed around and within the hip-joint become tighter and stronger, and the member more and more useless. As the child becomes older, the sense of his helplessness and deformity wears upon his mind; nervous irritability

embitters his life, and hastens the ill-health which is sure to follow close confinement in those whose constitutions have already been impaired by scrofula, or long-continued inflammation and suppuration.

At the Children's Hospital of this city, we are striving to rescue some of these poor deformed children from their forlorn condition. We find that when the deformity depends merely upon muscular contraction, and when it has not been of long continuance, it may be overcome by simple extension by means of a weight, which, after a time, may be substituted by some such splint as Davis'.

When the deformity has existed for a long time, even when purely muscular, it is advisable to etherize the patient; and as the muscles become relaxed, to straighten the limb, and then accustom it to this position by extension. But in many of these old cases, the long-continued contraction has caused a permanent shortening of the muscle. This shortening cannot be overcome by relaxation, and a subcutaneous division of muscular or fibrous tissues, myotomy or tenotomy, is advisable. When, in addition to the muscular contraction, there are fibrous adhesions within and around the hip-joints, these must be broken up by manipulation while the child is under the influence of ether. Any attempt to straighten such a limb by screws, or other mechanical appliances, simply tortures the child to no purpose.

By exercising our best care and judgment, and notwithstanding that many of our little patients have been weak and scrofulous, with an excitable nervous temperament, our operations have been uniformly successful, and the results have surprised and delighted the patients and their friends. They are satisfied and pleased that the deformity is removed, while we hope and strive for something more. The limb ought again to become a useful member of the body. But in old cases it is very hard to teach the child to use it. Though perfectly free from pain, the muscles do not respond to the will, and all of them have lost much of their old activity. Their power can be regained only after repeated efforts. The child must be encouraged to try and try again. He must *learn* to walk. The process is a tedious one, and before it is completed some intercurrent disease may carry off these delicate little ones. In August last one of the most troublesome of our cases died of dysentery about eight months after his mother, with joy, had taken him home from the hospital free from his sad deformity.

*Case of Monstrosity.*—Dr. F. H. Getchell related the following case of this:—

On the 28th of May I was sent for to see Mrs. M——, æt. 19, who had been taken in labour, accompanied with some flooding. It was her first child. On my arrival I found the pains regular, and very severe; the os well dilated, and soft. The labour progressed slowly, but terminated without assistance in twenty hours after I first saw the patient, with the birth of a monster. It was born alive, but died in about half an hour. On examining the child I found that, besides having club-feet, and spina bifida, it had all the abdominal organs outside the abdomen, covered only by a thin serous membrane resembling the peritoneum. There was neither anus nor genital organs. I questioned the mother as to the cause of this strange deformity, but she could assign none; she expected to have given birth to a perfect child. She had felt the movements of the child up to a few hours before it was born.

*Nov.* 7.—*Case of Leucinosis.* (With three woodcuts.)—Dr. Horatio C. Wood related the following case:—

I was first called to see Mrs. N—— in the fall of 1865, on account of some trivial ailment. She was at that time unmarried. She was of medium height, and very robustly built, weighing about 130 pounds. She had a complexion of medium fairness, brown hair, and was, for a woman, very strong and muscular. She had been brought up in the country, having come to the city a few months previous. Her health was generally good, but she had evident signs of a scrofulous taint, such as enlarged lymphatics, but had never had, that I learned, any decided outbreaks of the diathesis. Her age was 20 years; her parents were Pennsylvania German.

On the 5th of June, 1866, I was again called to see Mrs. N., who was then in the second month of her pregnancy. I found her presenting no abnormal symptoms whatever, excepting constant vomiting, which occurred not only when she took food, drink, or medicine, but also every few minutes, even when her stomach had been long emptied. There was a great deal of nausea and violent retching. The functional activity of the kidney, liver, &c., was apparently perfect. The urine contained no albumen, but was not examined for urea. Various anti-emetics were administered without effect; but on the fourth day of the attack, a blister to the epigastrium, dressed with sulphate of morphia, afforded relief. As soon as sufficiently recovered the patient went to her father's in the country, where she remained for about three months. During this time, as her mother informed me, she was constantly troubled with vomiting, and on one occasion was for four days unable to retain anything on her stomach. Her mother stated she threw up also very dark matters. During the whole period of her stay in the country, there was but one week in which she was able to go about freely.

On the 9th of October, 1866, I was summoned to see a little cousin of hers, in whom, in a short time, well pronounced symptoms both of scarlatina and diphtheria developed themselves. He had large diphtheritic deposits, not only on both fauces and tonsils, but also on the velum, and a general scarlatina eruption, which was followed by thorough desquamation. Although desperately ill for a time, he finally recovered. On going into his room one day, when the disease was at its height, I found Mrs. N. sitting by his bedside, where she indeed spent a great deal of time both before this and during the remainder of his illness. At this time she told me she still suffered daily with vomiting and general wretchedness, although she appeared perfectly well, not at all emaciated, and was in the best of spirits. Monday evening, October 22d (a little over two weeks from her first exposure), I was summoned to see Mrs. N., and found her in bed. Her skin was in all respects normal; her pulse about 80. According to her statement, her urine was normal both in quantity and quality; her only complaint was her constant vomiting. She had no headache, although she had had some little the day previous. She positively denied having had anything like a chill. She had vomited a good deal on Sunday, but was sufficiently well to spend the evening out. The substances rejected were all *ingesta*, with mucous and watery secretion.

*Tuesday morning.* No change; had had a bad night, vomiting constantly; everything taken into the stomach came up instantly. There was little or no nausea between the spells, which occurred from five to twenty minutes apart, and were accompanied with violent straining.

Urine passed freely and without difficulty; not decidedly diminished in quantity; normal to the eye; was tested carefully for albumen, but contained none; was not tested for urea.

*Wednesday morning.* Had passed a bad night, with some little tendency to wander. No essential change in her condition. About eight o'clock the previous evening her friends had noticed dark matters in the fluid thrown up by her, and these had increased constantly. Bowels not open yet, the purgatives ordered having been rejected. The paroxysms of vomiting were as violent and frequent as ever, but now were accompanied with the rejection of large quantities of watery secretion, and a peculiar black fluid resembling, in physical characters, the black vomit of yellow fever, and depositing, on standing, large black flakes, which, under the microscope, were seen to be composed of dark amorphous matter, and numerous, variously altered, and crenulated red blood-corpuscles of the same tint as the amorphous portions. The amount of this fluid thrown up during Tuesday, Wednesday, and Friday, was very considerable; frequently it came up at intervals of five minutes, and at times more than half a pint was rejected at once. During the previous day all the various anti-emetics were tried without any effect. The following drugs were among the remedies: creasote, lime-water, calomel, oxalate of cerium, ipecacuanha, sulphuric acid, sulphate of morphia, opium suppositories, &c.

*Thursday morning.* The patient, during the night, had shown a great tendency to fall asleep immediately after the cessation of an attack of vomiting, and now there was well-pronounced heaviness—amounting, indeed, to hebetude. An injection, administered the previous evening, had caused the passage of lightish, somewhat clay-coloured stools (according to her mother); conjunctiva icterode; skin scarcely perceptibly yellowish; normal as to temperature and moistness; tongue perfectly clean, not dry—perhaps a little large and flabby, otherwise normal. A 12-inch Chapman ice-bag was now applied to the spine, with its upper end at about the fifth cervical vertebra. It was tried faithfully through the entire day, a half hour on, and half hour off alternately; but without any sensible effect.

*Noon.* Pulse 120, not feeble; no tenderness was discoverable over any portion of the thorax or abdomen. On percussion over liver the amount and also intensity of the dulness was found to be abnormally small; the upper line of dulness anteriorly was about the sixth rib; it was almost impossible to make out the lower line, owing to the colon being much distended with flatus, and the pushing up of the intestines by the gravid uterus; the lower edge of the liver was, however, certainly up under the ribs. *Evening.* General condition the same. The blister on the epigastrium was ordered to be dressed with sulphate of morphia, and an injection of f℥iss of castor oil, and f℥ij of turpentine administered, which brought away (according to her mother) copious stools of nearly the *normal colour*, but *darker*. Some urine which I saw in the chamber was apparently thick with urates, but unfortunately I did not examine it save by inspection.

*Friday morning.* Marked jaundice; skin normal, save in colour; hebetude much more marked; vomiting more noisy, drier, with marked decrease in the amount of altered blood rejected. Amount of liver dulness certainly less than the previous day; no abdominal or thoracic tenderness; pulse the same; the patient's strength very good. Mercurial

inunctions were resorted to, and a drop of croton oil was placed upon her tongue without effect.

*Saturday morning*, 1 *o'clock*. About an hour since patient had one or two convulsive seizures; at present, drowsiness excessive, passing into semi-unconsciousness, with great restlessness and gritting of the teeth. 2 *o'clock*, patient unconscious, with terrible spells of dry, noisy vomiting every few minutes, and constant tossings, which soon after passed into fits of screaming, when she would yell so loud that she could be heard in the street a square off, at the same time wildly throwing herself about the bed. At this time she evinced great muscular power, and was so sensitive that touching her excited her very much; it became necessary to fasten her in bed with a sheet. Pulse 130, not feeble; tongue moist, not furred; no heat or dryness of skin; urine very scanty, clear, no albumen, had to be drawn off with a catheter. At consultation[1] it was decided to put the patient under chloroform, and bring about abortion.

The patient, although unconscious, violently resisted the administration of the chloroform—screaming, tearing away the sponge with her hands, throwing herself around, &c., but readily came under its influence, becoming quiet and utterly passive in our hands, and ceasing to vomit. The effect of the anæsthetic went off in a little while, when the vomiting, fierce screaming, and restlessness all came back as before. Chloroform had at this time no influence on her pulse; ether seemed to strengthen it.

On examination with the finger, it was found that the neck of the uterus was almost entirely softened down, and the os was sufficiently open to admit the fore-finger, and allow a head presentation to be diagnosed. Tyler Smith's method of causing premature labour was employed. The cold and hot water douche alternately were faithfully applied for several hours, conjoined with frequent irritation of the os uteri by the finger. At six P. M. but little progress had been made; the os did not feel materially different, excepting that it was now sufficiently open to admit the tips of two fingers.

About this time the cord began to protrude; the pulsations in it were very strong, showing that the child was still alive; they ceased, however, before 10 o'clock. The patient was allowed to rest until 9 A. M., when no further progress having been made, a piece of sponge-tent was introduced into the os.

Condition of patient at 9 A. M. was as follows: Jaundice increased; skin not abnormally hot or cool, rather dry, approaching a lemon-yellow colour, with purplish blotches on the limbs. Pulse 130, tolerably strong. Unconsciousness complete, with every few minutes fierce screaming fits, in which she would hurl herself about the bed, raise herself into the sitting posture, throw her arms and even feet wildly around her, and apparently try to bite those restraining her, all the time yelling and screaming

[1] On Wednesday evening the case appearing as though it were yellow atrophy of the liver, not being willing to assume the responsibility either of a prognosis or of the feared result, I requested a consultation; and the next morning met Dr. J. M. Da Costa by appointment. The diagnosis was made out as probable yellow atrophy, and a prognosis given in accordance. At the same time the possibility presented itself that the jaundice was secondary to, and caused by the vomiting, which, in turn, was the result of uterine irritation. It was this, with the patient's strength, which induced us to attempt premature labour. Of course, it was performed with the consent of the family, who were told distinctly that even it offered scarcely a ray of hope.

so that she could be heard a square off. Very little vomiting. Pupils dilated, answering sluggishly the stimulus of light. Dulness over the liver decreased, scarcely perceptible over a breadth of two inches.

12 P. M. Pulse 130, moderately strong. Screaming fits still more violent, with great restlessness, and gritting of the teeth in the interval. Os considerably dilated. A larger piece of sponge-tent was now introduced into the os, and soon worked its way up into the uterus. At this time I drew off some 10 f℥ of urine which had been secreted in about twelve hours. For chemical characters of this, see hereafter.

1 P. M. Labour-pains evidently commencing.

2 P. M. Pains stronger; vomiting ceased. Otherwise no change.

At 4 P. M., the head being well down in the pelvis, I applied the forceps, and, without any difficulty, delivered her of a very well-formed fœtus, which was not in the least jaundiced. The afterbirth came away immediately, the uterus contracted firmly, and no blood was lost.

5 P. M. The premature labour has apparently produced no effect; the great sensitiveness of the surface has not in the least abated, and the screaming fits are as fierce in proportion to the patient's strength as ever.

6 P. M. Mouth very dry, with sordes. Pulse 160, much more feeble. Breathing, about 36 per minute. Heart sounds feeble, approximating in character. Pupils, about as in the morning. Skin not markedly hot, dry, or cool. Patient's strength evidently failing, although no greater quietude. Shortly after this there was a sudden change for the worse; the pulse ran up above 200, the skin grew cool, and the marks of approaching death became visible. There was no calm at the last, but life went out amidst wild groanings and stormy tossings, about 10½ P. M.

Desiring to have the urine examined by a thorough practical chemist, I submitted it to Prof. J. M. Maisch, of the Philadelphia College of Pharmacy. The following is his report:—

"*Colour*, deep brownish-yellow. Sp. gr., 10.20. *Reaction*, slightly acid. It was mixed with three times its bulk of absolute alcohol, whereby a dirty-white precipitate occurred: colour of the mixture, light wine yellow. The precipitate thus occasioned was dried; then boiled with a small quantity of water, and filtered while boiling hot. A deposit occurred on cooling, consisting of a white powder, which, when carefully heated, fuses somewhat, decomposes, and leaves charcoal, which is gradually consumed, leaving no residue. The deposit dissolves in a larger quantity of water, the solution yielding no precipitates with metallic salts. Evaporated with dilute nitric acid, no solid residue is left behind.

"This behaviour corresponds with that of *leucin*. Liebig's test to produce valerianic acid by fusing with hydrate of potassa could not be applied, owing to the small quantity of material. These reactions indicate likewise the *absence* of *Tyrosin*.

"The liquid left after separation of *leucin* by the boiling water, showed, by the usual tests, the presence of *sulphates* and small quantities of *phosphates*, but a total *absence* of *chlorides*. Slowly evaporated, the liquid left a crystalline mass consisting chiefly of *uric acid;* the edges of this crystalline mass consisted in part of thin prismatic crystals, apparently *leucin*. This crystalline residue was tested for *tyrosin*, without success, by the following methods: Scherer's test (with nitric acid and soda); Piria's test (production of sulpho-tyrosinic acid); and R. Hoffmann's test, as modified by L. Meyer (deuto-nitrate of mercury and nitrous acid).

"To sum up, the precipitate occasioned by alcohol in the urine contains: *Leucin, uric acid, sulphates,* and small quantities of *phosphates.*

"The alcoholic liquid separated from this precipitate was treated with subacetate of lead, the precipitate filtered off and washed with alcohol.

"The precipitate, which was of a light fawn-colour, was decomposed by sulphuric acid in the presence of alcohol, filtered, and the filtrate carefully evaporated: a deep brown mass remained behind, without any sign of crystallization. Tests were applied, with negative results, for biliary acids, biliary colouring matter, chlorides, sugar, and urea; but a small quantity of phosphoric acid was observed by the proper reagents. The precipitate occasioned by subacetate of lead in the urine, previously precipitated by absolute alcohol, therefore consists chiefly of *phosphoric acid, urinary extractive,* and *colouring matter,* in combination with lead.

"The filtrate from this precipitate was treated with sulphuric acid to remove the excess of lead added, and the filtrate from the sulphate of lead was carefully evaporated: a syrupy brown-coloured mass remained, in which no sign of crystallization could be observed; it was diluted with little water before the following tests were applied: With nitric and oxalic acids no indications of the presence of urea were obtained. With nitrate of silver a minute turbidity of *chloride* of silver was occasioned. Pettenkofer's test carefully applied, gave a faint but readily observable change of colour characteristic of the presence of a trace of *biliary acid.* Trommer's and Boettger's tests indicated the presence of a little *sugar.* The liquid remaining after the application of these tests was concentrated and again tested for urea without avail. The filtrate from the precipitate occasioned by subacetate of lead in the urine, previously precipitated by absolute alcohol, contains *extractive, little sugar,* and traces of *biliary acid* and *chloride,* but no *urea,* which ought to have been contained in this portion of the material.

"In regard to the course of analysis pursued, I desire to state, that I carefully avoided, in all the different manipulations, *all* oxidizing and deoxidizing agents. The *total absence of urea* in that portion of the liquid where I had a right to look for it, was so unexpected to me that I devoted a portion of the urine, reserved in the beginning, to again test for it. It was evaporated with care, and tested in the usual way with all the necessary precautions, but it could not be found.

"I regret very much that the amount of this urine (scarcely one and a half fluidounces) was so small as to preclude the possibility of submitting larger quantities to processes for preparing some of the compounds tested for. I refer particularly to Tyrosin and biliary colouring matter. The former, if present at all, could be contained in the urine merely as a very minute trace, because none of the tests gave any indications of it in that portion of the separated constituents which ought to have contained the whole amount originally present in about six fluidrachms of the urine. Regarding the colouring matter of bile, its rapid decomposition in contact with air and during chemical manipulations, is sufficient to explain the negative results, particularly in view of the mere trace of biliary acid observed."

Perhaps it will be useful to sum up in a few words the history just given in full, and then to point out some peculiarities in the symptoms. A robust lady, twenty-one years old, near the end of the sixth month of her first pregnancy, during which she has suffered very much from severe, persistent vomiting, and has had one or two attacks threatening her life, is

seized with symptoms precisely resembling those of her previous attacks; but instead of their yielding to treatment, they constantly become worse and worse, jaundice sets in on the third day, *without any fever or heat of skin*, percussion dulness over the liver lessens, symptoms of blood-poison appear, and she dies on the fifth day in a state of wild, unconscious delirium.

The general features of the case are those portrayed by Prof. Frerichs in his account of acute atrophy of the liver. None of the characteristic symptoms were wanting, excepting the deposition of a crystalline deposit of leucin and tyrosin in the urine; a chemical examination, however, of that fluid proved that leucin was largely present, though not in sufficient quantity to deposit spontaneously. Although the agreement was so complete as to identify fully the affection, yet there were some peculiar symptoms in the case which it is well to notice, to aid us in sifting out the diagnostic from the incidental symptoms of this disease.

There were no hemorrhages (except from the stomach) or petechiæ.

There were none of the peculiar oscillations of the pulse so universally observed by Prof. Frerichs.

There was no abdominal tenderness or pain.

Very few biliary products (acids or colouring matter in the urine), and tyrosin was, if present, only a trace, and there was not, at any time, a greenish sediment.

There was no headache, and not the slightest depression of spirits before or in the earlier portions of the attack.

The black vomit appeared before the jaundice, which in turn preceded all decided nervous symptoms.

*Autopsy about fourteen hours after death.*—Cadaver well formed; not at all emaciated; the breasts and limbs very well developed; a general bloodlessness of all the tissues very noticeable.

*Thorax.*—Heart rather large, its walls rather thick, with a slightly yellowish or buff-coloured tint; right ventricle containing a soft, illy-formed black clot; left ventricle without one. Muscular tissue, under the microscope, very much altered; the transverse striæ of the fibres generally having entirely disappeared, and the well-defined margins being lost. Occasionally a well-preserved fibre would offer itself, but almost the entire mass of the bundles were in an advanced stage of degeneration, presenting a granular, illy-defined structure, with innumerable small and large oil-globules through them, and longitudinal stria merely indicating the lines of separation of the primitive fibres. Under the action of acetic acid they became more transparent, and the vast number of oil-globules stood out in strong relief.

Fig. 1 represents the muscular tissue unaltered by reagents. Fig. 2 represents the shreds of tissue after the action of glacial acetic acid.

*Lungs*, to the eye, nearly normal; rather dry, presenting here and there patches of dark venous congestion, especially posteriorly, but mostly pinkish, everywhere crepitant. Not examined microscopically.

*Blood* obtained from the right ventricle, under microscope, presented nothing abnormal; when dried on a slide, no crystals were obtained.

*Abdomen.*—Liver remarkable for its excessive thinness, sharp edges, and its flabby texture. Very high up, its lower edge scarcely reaching to the ninth rib; of a yellowish colour, with a close, bright-red injection of the capillaries of the whole surface; on section, of a dull orange colour; no appearance of the lobules visible. Weight 2 lbs. 6½ oz. av.;

circumference 29 inches; long diameter $10\frac{1}{4}$; greatest transverse diameter $7\frac{1}{2}$; at the fissure, 6 inches; greatest thickness through right lobe, $1\frac{3}{8}$ inches; thickness of left lobe 2 inches from the edge, half an inch.

Fig. 1.

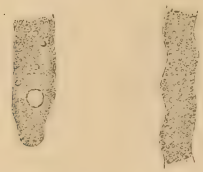


Fig. 2.

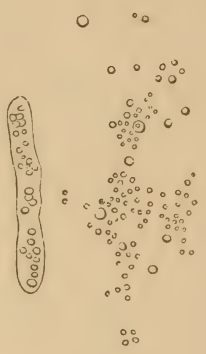
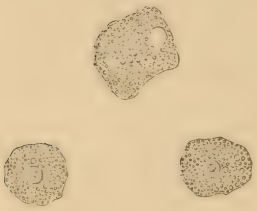


Fig. 3.



*Gall-bladder* full of bile; cystic, hepatic, and common ducts all perfectly pervious, as was proven by dissecting them out, and passing a probe through them.

On microscopic examination scarcely a trace of cell structure could be found. On a number of slides examined I found but a single cell, and that in a very advanced state of degeneration. Everywhere were myriads of oil-globules of all sizes, with granular matter. No crystals of leucin or tyrosin could be found.

*Spleen.*—Weight 71 oz.; colour rather darker than normal. Tissue decidedly softened; very friable. When a little of the pulp was placed under the microscope, numerous cells, of various shapes and sizes, filled with granules and oil-globules, and indistinct elongated bodies containing numerous granules, probably the remains of the so-called "caudate corpuscles" of the spleen filled the field of vision.

*Kidneys.*—Length $5\frac{1}{4}$ inches; breadth (at centre, from inner edge of hilum) $2\frac{1}{2}$ inches; thickness $1\frac{3}{8}$ inches; weight of one 6 oz. av. On section, cortical substance with a decided light yellow tint; pyramids reddish, with longitudinal streaks of darker red. The pelves of both kidneys were filled with a milky fluid, which the microscope showed to be composed of innumerable large, pavement epithelium cells, in every stage of degeneration. These must have come from the mucous membrane of the pelves themselves, and possessed the general characters of such cells, but were filled with granular matter and large and small oil-globules. (See Fig. 3.)

On microscopical examination the secreting tubules were everywhere found to be gorged with oil-globules, great and small, to the very uttermost. The secreting tissue appeared to be entirely destroyed; large oil-drops, still retaining the shape of the original cell, were the only indications of the normal gland structure that I could find.

*Supra-renal capsules* rather larger and softer than natural, and of a very decided yellowish tint; not examined microscopically.

*Peritoneum* injected.

*Stomach.*—Mucous membrane thickened and softened; much injected, more especially on the larger curvature near the pylorus, where there were numerous small ecchymoses of the, apparently, same dark substance so plentiful in the matters rejected.

*Duodenum.*—Mucous membrane softened; otherwise normal to the naked eye.

*Ovaries.*—Normal in general appearance, as well as in their microscopic structure, one of them containing a very well pronounced *corpus luteum.*

*Uterus.*—Muscular tissue seen, under the microscope, to have undergone a similar change to that of the heart-structure, although not to so great an extent. There were some oil-globules and granular matter, with a marked loss of definiteness of outline.

*Remarks.*—In regard to the nature of the terrible disease under consideration a number of theories have been advanced, prominent among which have been those which assume a "bilious liquefaction"—a melting down of the tissue in an excess of bile in the blood of the portal vein (Rokitansky), or in the biliary ducts and liver cells (Hensch, Von Dusch). Such suppositions seem to me so monstrous—the idea of living cells melting away in their own secretion so opposed to all modern pathology—that one almost wonders that Professor Frerichs should pause to demolish them as he does.

There is one explanation of the disease, which, from the source of its origin, and especially from the credence which it has gained, challenges our serious attention. Dr. Bright, of London, was, I believe, the first to advance it (*Guy's Hospital Reports*, vol. i. pp. 624–632), and it has been more or less fully adopted by most of the modern writers (*Frerichs*, Erster Band, p. 257; *Wood*, vol. ii. p. 576; *Aitken*, vol. ii. p. 834; *Flint*, &c.). The theory alluded to is, that the structural change of the liver is caused by some form of inflammation. Before discussing this idea of the nature of yellow atrophy, it is worthy of remark that its author, Dr. Bright, failed to grasp the peculiar, characteristic features of the affection, as is shown by his grouping under one head cases of this disease and others which were essentially different. Thus his first two cases (*Guy's Hospital Reports*, vol. i.) were simple jaundice, as it is very commonly seen, probably arising from a catarrhal inflammation of the gall-ducts, or even from a want of functional activity of the liver-cells. His third case was the result of external violence, and seems to have been an inflammation of the peritoneum, and cellular and possibly glandular structure of the viscus. The fourth case was probably the hob-nailed liver. Certainly, as he himself states, there was some chronic disease of the organ, so that it is almost impossible to decide the part the acute disease played, or whether there was any acute disease different from the chronic affection. His fifteenth and sixteenth cases appear to have suffered from the so-called acute atrophy. In his seventh case the liver was full of small abscesses; in his own words there was a very general inflammation of the substance of the liver, connected with the presence of gall-stones. The eighth case was one of "extensive suppuration of the liver."[1] These

[1] I have been thus detailed, not so much for the reason indicated in the text, as to illustrate the way in which this affection has been confounded with others

eight cases, he then says, may be considered as forming a kind of series of what may be called inflammatory, or perhaps idiopathic jaundice; but, as just stated, they are instances of at least five essentially different diseases. Surely, this being so, we can throw off any weight of authority which may belong to the inflammatory theory, especially as the best of the modern writers accept it, as it were, under protest.

According to the best developed phase of the inflammatory theory, the affection has its origin in a diffused inflammation of the glandular structure of the liver. Let me quote the words of Frerichs, as translated by Dr. Murchison. He says (p. 229, Eng. translation): "This theory was first enunciated by Bright, who described cases of the disease under the appellation of hepatitis; in recent times, Engel, Wedl, and Bamberyer, have subscribed to it, and have explained the destruction of the cells by a fatty degeneration arising from an acute exudation process. Although I have some hesitation in identifying the destruction of the hepatic cells with fatty degeneration, still I cannot but adhere to this view in so far that, according to my experience, an exudation-process constitutes the starting-point of the disease. On close examination of a liver which is undergoing acute wasting, portions are found, mostly in the right lobe, in which the morbid process has not run its entire course. We here observe not merely a remarkably congested condition of the capillaries, but in the circumference of the lobules, broad, gray bands, consisting of finely granular matter with isolated cells undergoing disintegration, while the cells nearest to the central vein still continue normal, except that they are infiltrated with bile." Allowing this last observation to be strictly correct, is it proven that this gray matter is an exudation product? In the liver of the case herein described no opportunity was presented of confirming or disproving the faithfulness of the observation—all parts of the liver seemed equally destroyed. Yet on section the liver seemed to be largely composed of grayish granular matter, and I confess that the contents of the one or two cells seen by myself appeared to be identical with this external material. For this reason I would incline to consider that these broad gray bands were the *result* of the *cell disintegration* going on in their midst, not a primary exudation—the cause of the cell change. Be this as it may, allowing the first step of the morbid change to be an exudation process, it is no proof that the process is inflammatory. Is tubercular disease inflammatory? and is not an exudation the first local manifestation? Yet this is almost the only shadow of a proof of the truth of the inflammatory theory. It appears to me, therefore, that this hypothesis bears upon its very face the Scottish verdict of "*not proven;*" and more than this, I hope to adduce proof of its falsity.

In the first place *fever* is *not* one of the symptoms of the affection, although so stated in some of the recent text-books. Frerichs says (Eng. trans. p. 217): "Along with the colour, the skin was usually cool, dry, and inactive; in none of my own cases was any elevation of temperature observed. Alison and Bright likewise make particular mention of this circumstance."[1]

by the older writers. All the observations made prior to the appearance of Frerichs' book are of but little avail, since it is rarely certain that the cases are really those of acute atrophy. In endeavouring to arrive at a true idea of the nature of the affection, it seems to me a vital point first to eliminate all doubtful cases; under which head I would class all in which there is not distinct notice of the presence of leucin or tyrosin in the urine or liver.

[1] In very thin sections the yellowish colour was scarcely apparent.

In the case herein described, one of the most striking features was the coolness of the skin, which was observed in *all stages* of the disease, and was accompanied, until the last few hours, with a moist, normal tongue, on which not an epithelial cell seemed ruffled; in a word, there was not a trace of a febrile movement, and this in a tolerably robust patient. May we not then set down as a character of the disease *absence* of fever? Now is it conceivable that if so large a gland as the liver was so intensely inflamed as to totally destroy it in four or five days, the system would not sympathize with it sufficiently for fever to be excited?

Secondly. Not only is fever wanting, but the peculiar local characteristics of inflammation are not present. We have not only no proof whatever, but there is no reason for supposing that there is any enlargement of the organ at any stage.

Even tenderness and pain are frequently wanting. The violent retching must of necessity cause some degree of soreness; yet, in Mrs. N. firm percussion over the liver produced no uneasy sensation whatever as long as she was conscious. Afterwards it was not tried, since touching the patient anywhere produced so much excitement that it would have been impossible to judge of the results.

The general and local symptoms differing thus *in toto* from those of inflammation, what shall we say as to the structural lesions found on *post-mortem* examination? Not only can we say with Prof. Wood, "The results of the disease are quite different from those exhibited in any other example of hepatic inflammation;" but also that they are totally unlike those of acute inflammation in any organ whatever. Allowing, for argument's sake, that the change is a mere fatty degeneration, where do we have even fatty degeneration occurring as the result of an inflammation of a few days' standing? Further, is not the metamorphosis more than a mere fatty degeneration? Even Frerichs is forced to admit this. Is it not an organic change—*sui generis?* Blood loaded with leucin and tyrosin, a liver tissue studded with crystals of the same—surely these are not the accompaniments of a mere fatty degeneration. Prof. Wood (*Pract.*, vol. i. p. 124), in speaking of tubercle not being the result of inflammation, says: "But a sufficient refutation of this opinion is, that in a vast number of cases tubercles exist without any inflammation whatever, evinced either by the symptoms or by post-mortem anatomical examination." So I would sum up our past argument; shall we grant the proposition in the one case and not in the other?

*But even stronger and more convincing is the fact that the liver is not the simple seat of the disease, and probably is neither sooner nor more terribly involved than other vital organs, but merely partakes of the prevailing dyscrasia.*

Jaundice is one of the most prominent symptoms of the affection, and as it is generally connected with disease of the liver, the attention of observers has been attracted to that organ, where the terrible lesions found have riveted it, and caused them to overlook important lesions elsewhere; still almost every one has noticed that the kidneys were diseased. The German professor, alluding to these organs, says (Eng. trans. p. 227): "Besides the deposit of pigment dependent upon the jaundice, I have found the glandular epithelium infiltrated with granules, and in most cases in a state of fatty degeneration, and the tissue itself flabby and shrivelled." ("*Das Gewebe schlaff und welk*," p. 235, Erst. Band.) He further states that they have not received the attention they deserve, which seems true of all

the organs except the liver. One of the most significant symptoms of the disease is the absence of urea from the urine, which, with the presence of urea in the blood, is irrefragable proof of utterly perverted cell action in the kidneys. Is not the retention of urea in the blood fully as serious as the retention of the bile elements—concerning which Frerichs says: "I do not here refer to the presence of the constituents of the bile, of the harmlessness of which I have convinced myself by a long series of injection experiments." The symptoms of the last 48 hours of Mrs. N. were precisely those of uræmic poisoning: the restlessness, gritting of the teeth, wild convulsive tossings, fierce screams, and utter unconsciousness, were all in perfect agreement. The microscopical examination of the kidneys proved that in her case their glandular element was as completely destroyed as that of the liver; tubules completely stripped of secreting epithelium and everywhere gorged with oil and granules, marked the common wreck. Can it be said that this death of the cells, this complete degeneration of the secreting tissue, was caused by an effort to eliminate bile poison? It seems not. The case lasted but four or five days, and at no time did the urine contain biliary colouring matter in any amount. Is not the fact of the non-presence of the bile pigment in the urine when it was loading the blood, dyeing the tissues, and oppressing the nerve-centres, fair proof that the secreting cells were already altered; that the kidney lesion was at least consentaneous with that of the liver? It seems to me, in view of these facts, it would be as proper to call the disease acute atrophy of the kidneys, or acute uræmia, as acute atrophy of the liver or acute jaundice.

I have no doubt the same change took place in the supra-renal capsules. Unfortunately, I did not at first suspect the universal alteration of cell-structure that prevailed, and these organs were not preserved for microscopic examination; but they had the peculiar appearance and softening of other organs. The mucous membrane of the pelvis of the kidneys was the only one whose epithelium was examined with the microscope. The cells were undergoing the characteristic change; they were gorged with granules and oil-globules of various sizes. The spleen tissue had not escaped; its cells were everywhere undergoing the same destructive metamorphosis; the so-called caudate corpuscle appeared to be almost entirely destroyed, or only represented by elongated formless masses of granules. Even the muscular tissue of the uterus had suffered. The heart-fibres were very far advanced in the same destruction. In short, not only were three of the most important glands destroyed, but pavement epithelium and striated muscular tissue were equally blasted. It might be argued that these were mere accidental changes in a single case. This has been answered for the kidneys. The patient was one of the last in whom a fatty heart might be looked for—young, robust, muscular. More than this, it seems evident that the same degeneration of heart-structure existed in Frerichs' cases. It is very evident from the text of his work that Professor Frerichs did not examine the heart-tissue with the microscope. In Mrs. N.'s case the heart was pronounced to be healthy, before the microscope revealed the change. Would it be an unfair inference, that if the German Professor had examined the heart-tissue, he would have found a similar degeneration? But we are not left to mere inference, for fortunately his acute observation noted abnormities which he failed to appreciate. In describing the appearance of the liver to the eye, his favourite expression is, "*schlaff und welk.*" It occurs over and

over again, and is applied almost as freely to the heart-tissue. Thus, in the account of the autopsy, Obs. 14 (Erster Band, p. 210), occur the words "*Das Herz schlaff und welk;*" and a little further on, "*Die Leber schlaff und welk.*" In summing up the pathological changes of the disease (Erst. Band, p. 235), he gives as a constant lesion, "*die schlaffen, welken Bewesenheit des Herzmuskels.*" Taking these facts into consideration, it seems evident that in this disease there are consentaneous and identical structural changes in a vast number of important organs—changes, moreover, which are peculiar to the disease—totally different from those occurring in any other known affection. Is it conceivable that the links of this morbid chain should have been forged by one of their own number; that the starting-point of change so wide-spread should be a mere local disease, which in a day should involve almost every structure of the body. Can this be? It would seem not. Are we not forced to acknowledge that in the so-called yellow atrophy of the liver we have a constitutional affection of which the various structural changes are merely the local manifestations?

Considering this to be really the case, the question arises, what is the nature of the disease? Of the ultimate nature—the essence—of the various constitutional diseases we know little or nothing. All that is in our power to do, is to arrange them so as to obtain groups, the individual numbers of which are similar or in their nature identical with one another. Of all these groups the one which presents most evidently a definite idea outcropping amidst various conditions—which represents most closely a *genus* of naturalists—is the FEVERS. To this well-marked group it seems to me impossible to refer yellow atrophy.

In the first place, the most manifest and constant symptom of these diseases, that from which they derive their name—*i. e.*, *fever*—is wanting, in yellow atrophy. Secondly. All of the fevers evidently arise from the action of some specific poison derived from without, whilst in the history of the reported cases of acute atrophy there is nothing which can lead us to suspect a peculiar poison. This argument is, I am aware, not a very strong one, since so much obscurity still shrouds the origin of yellow atrophy, and yet it has seemed to me to have some force, for if there was a definite fever poison introduced into the blood from without, the disease has certainly been sufficiently studied for some of the laws of the development of the poison to be made out.

A third reason of some force is the non-contagiousness of the affection. The fourth and apparently decisive argument against the supposition that it is a fever, is derived from the fact that there is no constitutional symptom of any moment until after the destruction of gland tissue has gone so far that there is evidently blood poisoning from retention of effete substances. It is well known that in the various fevers we have evident symptoms of poisoned blood, long before the characteristic local lesions are fully developed. Thus, there are achings in the loins, back, and head, chills, fever, hot skin, dry tongue, generally perverted secretion, evident manifestations of a disturbed nervous system, and all the numerous symptoms which make up the whole of an ordinary fever; but in yellow atrophy of the liver all these are either totally wanting or else do not appear until after, and as an apparent consequence of the local disease.

If it be not a fever, what is it? It appears to me to be a member of that class of constitutional affections to which tuberculosis belongs—a rather illy defined group of affections characterized by the absence of

fever and inflammation as necessary symptoms, and the magnitude of the local lesions. More in order to render my view of the pathology of this disease definite, to make any misunderstanding impossible, than with the idea that the name will not be superseded by a better one, I venture to propose to call it *Leucinosis*, since that substance is one of the chief products of the disease. If Professor Frerichs is right in his belief that the first step in the morbid local change is throwing out of a peculiar exudation, it will very strongly corroborate my view of the disease. If the possible explanation of the gray bands, given a few pages back, be found hereafter true, does it alter the case? Is it utterly disproven that even tubercle itself is the product of cell degeneration?

The only objection which occurs to my mind to the view advocated in this paper is the rapidity of the course of this affection. Granting that the disease really commences when it apparently does, if we take into consideration the number and importance of the organs concerned and the method of attack, is its course so very much more rapid than is seen in some cases of acute phthisis? In the latter affection only the lungs are attacked, and they are of such nature that immense alterations may and do take place in their structure without the suspension of their functions. In this disease, however, the organs are so attacked that their function almost immediately ceases in the part diseased, and that cessation means death.

And yet I cannot avoid here expressing a strong suspicion that the disease is not so rapid in its course as it appears; that in fact the local change goes on silently for some time before the final outburst, making a slow and sure headway—riddling the organs perhaps with disease, and yet leaving sufficient of their structure intact to prevent the induction of any very manifest symptoms until, having obtained a foothold, the local disease suddenly and rapidly increases, advancing, it may be, simultaneously from innumerable centres, and producing the characteristic symptoms of the affection. We all know how latent tubercle often is. The history of the case herein described lends sufficient probability to this surmise to make it worth while in similar cases to watch carefully for some decided proof one way or the other.

This much is certain, the patient had been vomiting constantly during her pregnancy to an extent rarely seen; that she had had two attacks closely simulating the earlier part of the fatal one, and according to her mother, in the second of these attacks (which occurred in the country), had thrown up black matters like those rejected in the fatal seizure, all these symptoms occurring without the urine being albuminous.

If ever I should meet with a similar case, I would certainly test quantatively the urine for urea, and would consider a *lessened excretion of urea* with a *non-albuminous* condition of the urine as very grave symptoms, and if *traces of tyrosin or leucin* could be found, it seems to me that almost positive proof of the commencement of the affection would be afforded.

Dr. Da Costa said that he had listened with a great deal of interest to the remarks of Dr. Wood; and that the thoroughness with which the case had been investigated certainly rendered it a valuable addition to the literature of the subject. Yet there were some points that had been advocated which seemed to him to admit of a different explanation; and

there were others which grew out of a consideration of the case, to which he begged to call the attention of the College. And in the first place it appeared to him that many instances of acute atrophy that had been reported could not be explained on the supposition of a diathesis. For instance, acute atrophy has been known to have ultimately followed obstruction of the bile ducts from cancerous deposits in the duodenum (as in Observation No. XIX. of Frerichs); or cirrhosis of the liver (as in Observation XXI., in which leucin was found in the blood and urine). It has, therefore, clearly been a sequel to cases in which the liver was already diseased, or at all events seriously interfered with in its functions. Again, what becomes of the examples of acute atrophy produced by mental emotion, such as have been described by Morgagni and others? To cite the case, so well known in medical literature, of Boerhaave, of an officer who receiving a blow was prevented by bystanders from obtaining revenge with his drawn sword, and who became jaundiced and died shortly with signs of the most marked cerebral disturbance. It is true that in some of the older cases the diagnosis of acute atrophy may be called into question. But even by the most recent observers violent emotions are admitted as giving rise to the disease.

A view of the subject suggests itself that, while fully admitting the more general changes in tissue, which the case before the Society has so satisfactorily proven, yet does not set aside the primary difficulty as being in the liver. It is to suppose that these changes in other organs are produced by the altered composition of the blood—altered by the products it retains—and the disordered nutrition thus caused, fostered perhaps by the disturbed condition of the nervous system. That these structural metamorphoses would have to occur very rapidly is not an argument against this view; for do we not find in diseases running as rapid a course, and in which the blood is greatly altered, extensive tissue alterations? We know, for instance, that in yellow fever the liver is yellow, and its secreting cells filled to the utmost with fat; that it has, in other words, undergone an acute fatty degeneration. This change, first pointed out by Dr. Clark, has been constantly noticed by the speaker; but he has also found it to be associated with a granular condition of the muscular fibres of the heart, and even of the minute structure of the kidneys.

And while referring to kindred changes in yellow fever, the great similarity of the phenomena of this malady to acute atrophy may be mentioned. Not only does this similarity show itself in the pathological state just mentioned, but in the accumulation of urea in the blood, in the colour of the skin, the character of the vomit, and of other symptoms, and in the rapid progress of the disease. We can thus understand how it has happened that epidemic jaundice of grave type, amid which cases of yellow atrophy have occurred, should have been considered as yellow fever, and even—as in the notice by Garnier-Leteurrie of the epidemic of jaundice in the French army of occupation in Rome, in 1849—be considered as identical in etiology.

There is, lastly, one more point which the consideration of the case before us suggests: that many of the symptoms, particularly the abnormal nervous symptoms, are in great part due to the non-elimination of the urea. And here, again, we find that the presence or absence of albumen in the urine has little or nothing to do with the question; and that in cases of suspected uræmia the urine must be specifically tested for

urea without reference to whether or not it contains albumen. But to this point Dr. Da Costa stated that he had elsewhere called attention.

*Paraplegia without Discoverable Lesion of the Brain or Spinal Cord.*—Dr. Isaac Norris read the following account of a case:—

The interest, as well as the remarkable results of the post-mortem, he stated, must be his excuse for drawing the attention of the College for a few moments to it.

The patient, aged 45, had been for some time Orderly Sergeant of Co. E, 26th Pa. Vols., and, for bravery in the field, had been promoted to the position of First Lieutenant of his company.

At the battle of Chancellorsville, he was wounded in the left side, the ball passing in above the hip. From the fact of the wound being often inflamed, and never ceasing entirely to give him trouble, it is questionable if the ball was removed, at least entirely. The patient was unable to give any definite information on the subject.

At the battle of Gettysburg, to which he hastened when it was known that his regiment was likely to be engaged, with the usual bravery of the American soldier, although still suffering from the effects of his wound, he was unfortunate enough again to be shot down, this time receiving the wound in his left leg. The limb must have been considerably shattered, for it was eventually necessary to amputate it about a month after the injury, every attempt being made in the mean time to save it. Conservative surgery failing, it was amputated at the upper third at Little York Hospital, Dr. Snyder being the attending surgeon. After remaining there some months, he expressed a desire to go home, and was ordered to Philadelphia; he was sent by the Medical Director to Camac's Woods, where he remained, receiving the best care that the resources of a great city could command, until, the time of his regiment expiring, he was mustered out of the service. In process of time a limb was fitted to the stump, the result of a flap operation, and with practice he soon learned to walk on it, nearly as well as before the operation.

On the 19th of September, 1866, as he was returning home from receiving his pension, his wife first noticed some peculiarity in his gait, and the difficulty he experienced for a moment or two in walking, which would then go off, and remarked that some uncharitable persons not knowing the case, might think him intoxicated. This difficulty continued to increase, but he thought it was nothing, and would soon wear away. A carpenter by trade, he had given up the business since the war, and was employed at the gas works to superintend the meters; now walking from his residence, 21st and Locust, to the works at Market Street bridge, and back, daily. This he soon found quite a task, and, as he noticed each day that it became a more difficult one, he applied to me to give him, if possible, relief. Thinking the exercise beneficial, I did all I could to induce him to use the limb, and recommended also a douche of cold water, the reaction being very grateful to him. Rubefacient liniments were also applied and flannel worn next the skin. As tonics, quinia and iron were employed, as well as strychnia, this last being given not only by the stomach, but also endermically, and I thought with happy effect. The promptness with which it can be made to act renders this method a favourite one with the discriminating physician. Reading in a French author some years ago, of the beneficial effects derived from ergot in like

cases, I was induced to try it here, but could not perceive any effects from it. Cantharides was also tried, but without any great benefit. The strychnia seemed to act best, and the patient was at first quite amused at the little twitchings and involuntary contractions of the muscles caused by it, especially in the amputated limb, showing that he was fully under the influence of the drug. A generous diet was also insisted upon.

Finding the trouble increasing, and that he was slowly losing the use of the limbs, a cane at this time being necessary whenever he attempted to walk, the battery was tried, and for a time with good effect. He soon got used to it, and it was then necessary greatly to increase its power to produce any effect. The lower extremities began now to be but appendages to the trunk, nearly all sensation and power having left them. That the trouble proceeded from the spine I think was proved by the irritability being so greatly diminished instead of increased, as one would have expected if the cerebrum had been involved, a distinction first pointed out by Dr. Marshall Hall. His memory also was excellent.

Being now unable to walk except with the aid of crutches, and there being some difficulty about the battery being applied daily, I recommended his seeking admission to the Pennsylvania Hospital, where he was received, and remained some weeks, his condition not improving. Becoming dissatisfied with his hospital life, and believing that his death was close at hand, he returned to his home, and again placed himself under my care. In the short time during which I had lost sight of him, he had become very much worse, and I deemed it my duty to acquaint the family with the probable result of his case. At this time he was paralyzed as high up as the breast, the abdomen being much swollen and tympanitic. He swallowed anything with great difficulty, and a little wine and beef-tea was all I could get him to take. The pulse was very feeble, and he had considerable difficulty at times in articulation, which was evidently attended with pain. The memory, and his other faculties, I did not find impaired in the slightest degree during the disease. Entire loss of sensation now existed in the limbs and lower part of the trunk, the feces and urine coming away involuntarily. The catheter, however, had occasionally to be introduced. To add to his troubles, distressing bed-sores had made their appearance, and my great object was now not so much to prolong his life, as to alleviate his sufferings, the former having ceased to be desirable. Death took place Nov. 30th, or a little over two months after his attention was first drawn to his disease.

The patient believed that the amputated limb was entirely the cause of his trouble, and from the neuralgic pains he experienced in it from time to time, the supposition was a very natural one; but the first wound in the side may, after all, have been the real cause of the difficulty. As I have said, it never ceased to give him trouble.

Owing to a misunderstanding, I was not present at the post-mortem, which was performed by Dr. Hare, but from notes of the case taken by Dr. William Pepper, I am indebted for the following details:—

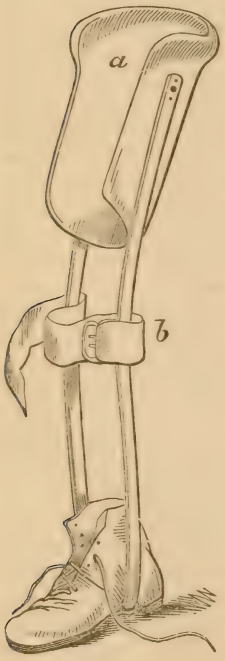
"Only the brain and spinal cord were examined, as it grew so dark that it was impossible to continue the work, and perfectly incredible as it seems to us in the light of former experience, there was absolutely no recognizable lesion of any part of the nervous system. The spinal plexus of veins was much congested, and in one or two places the cord itself seemed too full of blood and perhaps a little stained; but the membranes

were clear and smooth, the vessels of the cord healthy, the nerve tubes normal, and the nerve cells in the gray matter of the cord especially healthy. The brain tissue was also healthy. Where then are we to seek for the cause of these cases? It may be that if we had been able to make a minute examination of the ganglia of the great sympathetic nerve, we should there have found some morbid alteration to account for these otherwise unaccountable phenomena."

*Splint for Incipient Hip-Joint Disease.*—Dr. Packard exhibited a splint employed by him in a case of this kind, in which it was highly desirable that the patient, a boy five years old, should move about, and at the same time that pressure should be taken off from the hip-joint.

The child, when first seen, was pale and somewhat emaciated, with great nocturnal restlessness; the limb was drawn up and much wasted. He had received several blows and falls upon the knee and hip. Extension by means of adhesive plaster, and a sand-bag attached to a cord playing over a pulley, was used, with general remedies, until the child improved very much, and became anxious to go about. The great irritability of the adductor muscles forbade the use of the ordinary forms of splints, with a perineal band. The splint represented in Fig. 5 was therefore made by Kimball & Co., 631 Arch Street. It consists of a trough or posterior socket of vulcanized rubber (*a*), on the rounded upper edge of which the tuber ischii and buttock may rest as on a chair. This is retained by a lacing in front of the thigh (omitted in the drawing for the sake of clearness); and to it is fixed on either side, by a pivot, one end of a steel bar as light as possible to be strong enough to support the child's weight. The middle of this bar, rounded, is hinged beneath the sole of the shoe, and its two upper portions are slightly bent at the knee, so as to allow the child to sit down more conveniently. A double band (*b*) prevents the knee from coming forward too much.

Fig. 5.

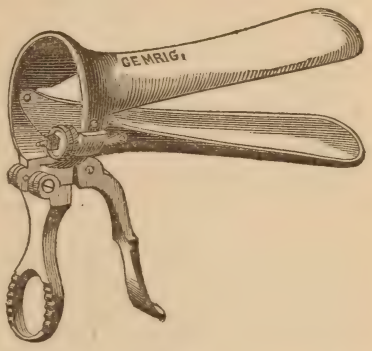



When this apparatus is applied, the patient's weight is balanced on the upper rounded edge of the hard-rubber trough, and the acetabulum is entirely relieved of pressure. A little practice enables him to sit alone, as it were, with great ease and readiness. The heel is also brought down very efficiently.

Care must be taken to attach the upper ends of the bar to the hard-rubber trough at a point high enough up and far enough back, otherwise the latter will tend to rock backwards under the weight of the body, and the patient might even be in danger of having the thigh-bone broken by the pressure forward of the lower end of the trough.

The simplicity of this apparatus, its effect in taking pressure off the acetabulum, and in bringing down the heel, are the grounds upon which it is recommended to the profession for trial.

*New Form of Vaginal Speculum.*—Dr. Getchell exhibited a modification of a French instrument called Cusco's speculum. The original is a short bivalve with flat, wide blades coming together at the ends, and opening by short leaves that fold to the side and end when not in use. The theory of its operation is, that by distending the valves the vagina is taken up, thereby drawing the uterus near the vulva, which facilitates manipulation, and gives a much better view of the os than can be obtained through the cylindrical speculum, which pushes the uterus high up within the pelvis. It is also small, convenient to carry, and, be-being simple in its construction, not likely to get out of order. We found with the original instrument that in cases where the vagina was large and much relaxed, the valves when fully expanded failed to distend the vagina sufficiently to give a view of the os. The modification consists in simply lengthening the valves about one inch, which of course allows much greater distension of the vagina. We have used this instrument in quite a large number of cases, and always found it to work satisfactorily.




## MEMOIR OF DR. CHARLES P. TUTT.

By Dr. W. L. Wells.

[*Read before the College of Physicians, Dec.* 5, 1866.]

Dr. Charles Pendleton Tutt was born on the 2d of November, 1832, on Santa Rosa Island, Florida. His father, Colonel Charles Pendleton Tutt, who had been Navy Agent of the port of Pensacola, near which Santa Rosa Island is situated, died just one month before the birth of this, his only son. In a few months the widow left for the north, with her son and a daughter a few years older, in a United States vessel sent for that purpose by President Jackson, who was a personal friend of the family; and, after a narrow escape from shipwreck in a furious storm off Cape Hatteras, they arrived at last at the old homestead near Leesburg, Loudon County, Virginia, where the years of Dr. Tutt's early youth were passed, and in the neighbourhood of which place he went to school until he was prepared to enter college. He was then at his own request sent to Burlington College, Vermont, where he distinguished himself by his close application and his devotion to his studies. He was, however, after two years' residence there, compelled to leave on account of his health, which had become completely broken down.

A year's exercise in the mountains of Virginia restored him to vigour, and enabled him to resume his studies, an opportunity which he eagerly embraced; and although inducements were at this time offered him to settle near his home, in a neighbourhood where he would be surrounded by his relations, belonging to some of the oldest families in the land, he preferred a life of activity to that of comparative ease and quietness which would be the lot of a Virginia farmer.

He began the study of medicine at the University of Pennsylvania in 1854; having entered his name as an office student of Dr. George B. Wood, Professor of the Theory and Practice of Medicine in that institution. In common with the rest of Dr. Wood's students, he attended courses in the summer months on obstetrics, auscultation and percussion, experimental physiology, and pharmaceutics. He graduated in 1856 with great credit to himself, and soon afterward was appointed Resident Physician in the Philadelphia Hospital, Blockley, where he remained for about eighteen months; there laying the foundation of that accuracy in diagnosis and reliability in treatment for which in after years he was beginning to become distinguished.

The circumstances which attended his resignation from this position were such as showed that he was actuated by a high regard to professional etiquette, without reference to results. It was on account of the appointment as chief resident in that institution of a physician who had lost his standing in consequence of unprofessional conduct in advertising medicines. An attempt made to induce Dr. Tutt to remain, if only long enough to enable the newly-appointed physician to become acquainted with the routine of the hospital, was met by the reply that the same reasons which induced the resignation would prevent him from acceding to that request. Thus, here, as in so many other instances, a strong sense of duty was shown to be a leading trait in his character.

On leaving the almshouse, he associated himself with the writer of this memoir for the examination of students in connection with the lectures at the University of Pennsylvania. In 1860 he associated himself with Dr. Edward Shippen for the same purpose, and even after Dr. Shippen had entered the army, he continued to examine, although then only his own private office students.

On the fourth of January, 1859, he married Rebecca, daughter of J. Fisher Leaming, Esq., a well-known merchant of this city, a young lady to whom he had been for some time attached, and with whom he lived in unbroken happiness up to the time of his death.

In 1858 he was elected as one of the district physicians of the Philadelphia Dispensary, and performed the duties during six years, although he was for nearly eighteen months of that time in the southeastern district, which was then the most difficult by far.

In the summer of 1862 he was appointed visiting physician to the Satterlee U. S. Army General Hospital, West Philadelphia, a position which he occupied from the opening of the institution until its closing after the end of the war.

Besides these duties he was for some time Demonstrator in the Philadelphia School of Anatomy, and Assistant to the Professor of Theory and Practice in the University, which last position he held in connection with both Drs. Pepper and Stillé.

He was also physician to the Magdalen Asylum.

It only remains for me to speak of one more duty, the performance of which he laid upon himself; that which cost him his life. He was elected in July, 1859, visiting physician, and subsequently librarian, to the Blockley Hospital, where he had already been as resident. Anxious, as he was, that the advantages to be derived from the study of disease in the wards of such a large institution should be as widely spread as possible, he organized (regardless of the additional labour imposed upon himself) a class of students to whom he gave daily clinical lectures. In

April, 1866, there was an epidemic of typhus fever at the almshouse. Dr. Tutt was unremitting in his attention to the sick and his demonstrations to the class. He made several post-mortem examinations on the bodies of those who had died of the disease. On the evening of the 26th of April he went to bed early in consequence of a headache. He was attacked the next day with fever, and in a few days more delirium set in. The disease was pronounced to be typhus fever. In spite of the greatest care and attention he sank, and died on the 11th of May, at 9 o'clock in the morning. His remains were interred in St. Peter's churchyard, on the 13th of May, by the side of his wife's family. At the time of his death he had thirty students in his class at the Blockley Hospital, and ten private students in his office.

In forming an estimate of his character we shall find that that for which he was perhaps most remarkable was his determination in the performance of what he considered just; and what is especially worthy of remark is the great number of laborious duties which he accomplished at the same time. Possessed of a perseverance of that rare nature which is not to be discouraged by either adversity or prosperity; a perseverance which no obstacle could arrest, and no temptation weaken; and which was directed more to fitting himself for, than to otherwise endeavouring to attain to, the highest positions which can be filled by a medical man; none doubted his capability to fill, and none that he was destined to occupy, a place which would cause his name to be written among those of the men whom Philadelphia has most cause to be proud of for eminent skill, professional attainments, and high-toned sentiments.

As a teacher, he won the affection as well as the respect of his students. He was looked upon by his patients as more than a physician; as a friend, an adviser, almost as a brother; and yet it was the will of the Lord that with the brightest prospects before him, surrounded by those who loved and respected him, he should be cut off in the strength of his years.

The Lord's will be done.

# SUMMARY OF THE TRANSACTIONS

OF THE

# COLLEGE OF PHYSICIANS OF PHILADELPHIA.

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1866. *Dec.* 5. *Abortion; Commencing Amputation of the Left Thigh, from being encircled by the Funis and probable Death of the Fœtus from Compression of the Cord.*—Dr. A. NEBINGER read the following case :—

I was called to Mrs. S——, who was suffering with uterine pains and hemorrhage. She informed me that she was nearly four months advanced in her pregnancy. She could not assign any cause for the threatened abortion. After having made vain efforts, for several days, to quiet the uterine disturbance, the abortion took place. I was present at the time. The fœtus was expelled with the amnion membrane entire. Having placed this in a basin, I proceeded to remove the placenta. This accomplished, Mrs. S. expressed a desire to know the sex of the fœtus. To satisfy her curiosity I opened the sac, when I was surprised and much interested to find the following conditions present: There was one turn of the umbilical cord (as is accurately represented in the accompanying figure) around the left thigh, about three-quarters of an inch above the knee, and so tightly encircling the limb as to have produced a deep groove in the soft tissues, and to have cut off the circulation of the limb below the part where this funis ligature was fixed.

The case is brought before the Fellows of the College because of the two points of positive interest which it involves, namely, the apparent cause of the death of the fœtus, by compression of the cord, and as a demonstration of the manner in which a fœtus in utero may sustain the *loss* of a limb, or a portion of one. Any fact which will throw a single ray of light upon the subject of congenital deformities and aid in forming a rational, or common-sense, conclusion in regard to how they are produced, cannot be without interest and value. Such defects are frequently accounted for by mothers, and indeed by some physicians, as the results of mental agitation, produced by seeing the deformed, etc. etc. By some physiologists and physicians these deformities have been accounted for by what they are pleased to call an arrest of development. Both of these modes are liable to grave objections, and are, I may say, generally given and received with doubts of their sufficiency. The case here presented, so far as it goes, negatives both those modes of accounting for certain congenital abnormities, and demonstrates how, by *mechanical* means, they may be produced. In this instance, the Fellows will see by even a slight examination of the fœtus, to which I now invite their attention, that it is evident if the cord had not been so tightly wound around the thigh, its compression would not have been so great as to have entirely prevented the circulation through it; the fœtus would then in all probability have lived

yet the arrest of the circulation in the limb below the point ligatured by the cord would have been so great as to have certainly materially diminished the growth of the leg and the lower part of the thigh, and would in all probability have given rise to sloughing off of the limb, and the child would have been born with a stump as nicely rounded up at the point of separation as if the amputation had been performed by a most expert and skilful surgeon.

The accompanying figure is an accurate copy of a photograph of the fœtus, taken within twenty-four hours after its expulsion from the uterus.

The fœtus, judging from its altered condition and the statement of Mrs. S. in regard to the interruption of the catamenia, had been dead for at least two weeks before it was cast off.

1867. *Feb.* 6. *Report on Meteorology and Epidemics.*—Dr. W. Lehman Wells read the following :—

In making a report on Meteorology and Epidemics, it is necessary to acknowledge my inability to establish any connection between the state of the atmosphere or the temperature, and the more severe epidemics, other than what is already known ; as that vegetable or animal decomposition and a certain degree of moisture are essential in many cases, and that cold is destructive to some epidemics and renders others inoperative for the time. Whether, however, the decomposing substance, the moisture, and the heat, produce the causes of epidemics, are themselves those causes, give rise to conditions requisite for, or at least favourable to, their development, or may not be in some instances entirely independent of them, is often not definitely known. The statistics will, therefore, be presented, and the prominent peculiarities and coincidences noted, in the hope that the exact relation in which they stand to each other may be discovered at some future time.

The statistics of the Board of Health of Philadelphia, although collected and arranged by that body with a great deal of care, are not as useful as they otherwise would be in consequence of the inaccuracy of the returns made by physicians, and of course more especially by so-called physicians, between whom and regular practitioners, unfortunately, no distinction is recognized by the law. To illustrate this inaccuracy, I shall take the month of January of the past year, where there are reported 57 deaths from debility ; 32 from convulsions ; 29 from inanition ; 29 unknown ; 24 from marasmus ; 4 from sore throat, and 2 from tumours. There are also 3 cases simply reported hemorrhage to 13 in which the seat of the hemorrhage is mentioned, and 8 of cancer to 15 in which the seat of that disease is indicated.

Besides these, 43 deaths are reported from old age ; 15 from casualties ;

1 from murder; 1 from wounds; 8 from gunshot wounds, and 1 run over on railroad.

There are here 277 cases reported (out of a total of 1402 in the month of January) where the cause of death is more or less uncertain.

After making allowance for these inaccuracies, and for others which are not manifest, but which the presence of these would naturally lead us to suppose must exist in no small amount, there will still remain a groundwork of valuable facts; valuable especially for the purposes of comparison with the death reports of other cities under similar regulations, and where the medical profession is similarly taught and organized, and with those of former years in the same city.

It is important also to remark that the reports of the Board of Health are based, not upon the deaths, but upon the interments, and that a small number must be deducted on that account, if we would arrive at accuracy.

From the meteorological observations kindly furnished by J. A. Kirkpatrick, A. M., Professor in the High School, Philadelphia, and which are entirely reliable, it appears that the year 1866 was remarkable for extremes, both of heat and of cold. Its hottest day, July 17th, was also the hottest for fifteen years, and although the mean temperature of its coldest day, Jan. 8th, was not as low as that of Jan. 9th, 1856, yet the thermometer at one period of the twenty-four hours was at —9° Fahr., or below the lowest point reached in 1856.

The mean temperature for the year was 54.90°, or about half a degree above the mean for the past fifteen years.

The mean pressure of the atmosphere, as indicated by the barometer, was 29.837, the same as that for 1865, and only $\frac{22}{1000}$ less than the mean for the past fifteen years.

The amount of rain and melted snow in the year was 43.573; ten inches less than in 1865, but only a fraction of an inch less than the mean of fifteen years.

Some of the more prominent peculiarities of the summer months (during which cholera made its appearance) were as follows: the mean temperature of the three summer months was 75.63°, or only one-fifth of a degree above that of the mean for fifteen years, which was 75.47°. Mean elevation of barometer in 1866, 29.747, or .072 less than the mean of fifteen years.[1]

Inches of rain in summer of 1866, 8.470, or 3.196 less than the mean of fifteen years, which was 11.666; mean relative humidity in 1866, 66.6; mean do. of fifteen years 66.

In June the mean temperature was 73.68°, or .62° above the mean of fifteen years, which was 73.06°. The barometer was 29.731 inches, or .058 below the mean for fifteen years, which was 29.789. Inches of rain in June, 1866, 3.390, to 4.322, the mean of June in former years.

In July, 1866, the mean temperature was 80.72°, or 2.72° above the mean of July in former years, 78°; 2.513 inches rain fell, to 3.622 the mean of former years.

During the hot weather in July, there were more deaths from heat fever or sunstroke than had occurred for many years. There were also five deaths in August. In all there were 131; 104 males and 27 females. This disparity is always found to at least this extent, and is of course to be accounted for by the greater exposure of men to the sun, and to ex-

[1] For complete tables, see the Journal of the Franklin Institute, Philadelphia.

hausting labours. 6 cases were boys, 1 girl; 26 between 20 and 30; 38 between 30 and 40; 35 between 40 and 50; 16 between 50 and 60; 8 between 60 and 70; and 1 over 70.

The number of deaths from this cause would have been greater had it not been for the employment of ice externally as a remedy, by means of which lives were undoubtedly saved which would have been lost before this remedy was brought into notice.

The total interments in Philadelphia, for 1866, was 16,803, which, estimating the population at 750,000, would give a proportion of 1 to 44.63, or 2.24 per cent.

Of these, 8851 were males and 7952 females; 4235 were males over 20 years of age; 4616 were male children; 3766 were females over 20 years of age; 4186 were female children, making 8001 adults and 8802 children. 931 were people of colour.

By deducting those buried in the city, but who died in the country, 643 in number, and the still-born, 798, we shall have 15,362, one death in 48.92, or 2.04 per cent.

The number of interments in 1865 was 17,169; in 1864, 17,582; in 1863, 15,788; in 1862, 15,097; in 1861, 14,468.

The greatest mortality in any one month of 1866 was in August, when 2401 deaths were reported, next in July, 2047, next in October, 1828. December was the healthiest month, only 982 dying.

The disease most fatal to children was cholera infantum, the mortality from which was 1090; next, convulsions, 663; marasmus, 552. Inflammation of the lungs caused 537 deaths; scarlet fever, 487; inflammation of the brain, 312; congestion of the brain 272; consumption of the lungs, 243; croup, 239.

The diseases which proved fatal to the greatest number of children, next to those above noticed, were, measles, 218; diphtheria, 187; dropsy of brain, 181; inanition, 176; inflammation of stomach and bowels, 153; diarrhœa, 139; typhoid fever, 136; cholera, 124; dysentery, 121; variola, 104; pertussis, 79; and cholera morbus, 54=1672.

Of all the deaths among children, 2232, or a little more than one-fourth, were from disease of the alimentary canal.

Cholera infantum, as already stated, caused 1090 deaths; in 1865 it caused only 884; in 1864, 641; in 1863, 930; in 1862, 629; in 1861, 618.

The deaths from diphtheria in 1866 were 192; 5 of them adults. In 1865 it was 260; 1864, 357; 1863, 434; 1862, 325; 1861, 489; 1860, 306.

Before 1860, no deaths from this cause were reported. This singular circumstance is owing to their being considered as modified cases of scarlatina, and so classified by the Board of Health before that time. They now report the deaths according to physicians' certificates, not only in this, but in all cases.

The total number of still-born was 798.

The mortality from the principal diseases of the respiratory apparatus was greater in 1866 than in 1865 or 1863; but not quite equal to the mortality in 1864. The deaths from congestion of the lungs, and catarrhal fever were, however, greater in number than even in 1864; this being principally owing to the first three months in the year, when influenza prevailed to a considerable extent, it being much more probable that a case of pneumonia originating in influenza would be designated catar-

rhal fever than that this somewhat vague term would be given to one of ordinary pneumonia.

In 1866 there were 1944 deaths from consumption, 1 to 8.64 of the total mortality, 994 males and 950 females. In 1865 there were 2026 deaths, 1020 males, 1006 females, 1 to 8.47.

| | Deaths. | Males. | Females. | |
|---|---|---|---|---|
| 1864 . . . . | 2089 | 1087 | 1002—1 to 8.42 | |
| 1863 . . . . | 1955 | 966 | 989 | |
| 1862 . . . . | 1949 | 961 | 988 | Average |
| 1861 . . . . | 1817 | 910 | 907 | of 7 years, |
| 1860 . . . . | 1622 | 785 | 837 | 1 to 7.6. |
| 1859 . . . . | 1505 | 780 | 725—1 to 6.03 | |
| 1858 . . . . | 1659 | 806 | 853 | |
| | | 8309[1] | 8257 | |

In former years the relative mortality from this disease was greater, as from 1840 to 1849 inclusive, when it amounted to 1 in about 6.76 from all causes.

This reduction, which is shown more than ever in the reports of the past two years, is probably owing (as was first suggested by Dr. Geo. B. Wood) to the general employment of cod-liver oil as a remedial agent.

On comparing the past nine years, we find (contrary to the rules usually laid down) that more males than females died of consumption in 1859, '61, '64, '65, and '66, and although in the other four years it is otherwise, yet the total mortality of the nine years shows a slight preponderance of deaths among males.

As usual, there are more deaths from consumption than from any other cause. The greatest number in any one month was 217 in January; the next, 185 in October; in July the smallest number died, only 116. There appears, however, to be no rule in reference to this, as sometimes the fewest deaths occur in October, or the other months of autumn. In summer, however, we seldom or never find a greater mortality than in the other seasons.

Between the ages of 20 and 30, deaths from consumption of the lungs are most frequent.

The progress and decline of the epidemic of petechial and other low forms of fever, are represented in the following table, where it will be seen that the epidemic culminated in 1864, when from typhus, petechial or spotted, and malignant fevers, and cerebro-spinal meningitis, there were reported 815 deaths, to 39 and 196 in the two preceding years, and 546 and 193 in the two following.

Smallpox caused 144 deaths; less than one-third of the deaths in 1865, when it was more fatal than for many years. Measles, on the other hand, caused more than twice as many deaths in 1866 as in any one of the four years preceding.

Three cases of yellow fever appear on the report of interments, but they all died elsewhere, the bodies being brought here for burial.

The table of deaths from miasmatic fevers shows a slight falling off in the mortality from that cause.

The deaths from pyæmia and erysipelas are in each case almost equal in number to those in 1865, but less than half those in 1864.

[1] Including 1865 and 1866.

*Deaths from various Epidemic Diseases.*

| | Jan. | Feb. | March. | April. | May. | June. | July. | August. | Sept. | Oct. | Nov. | Dec. | Total for 1866. | 1865. | 1864. | 1863. | 1862. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cerebro-spinal meningitis | 5 | 6 | 8 | 6 | 10 | 9 | 8 | 7 | 6 | 5 | 2 | 5 | 75 | 130 | 144 | — | — |
| Petechial or spotted fever | 5 | 2 | 2 | 2 | 2 | 2 | 1 | – | 1 | – | – | 1 | 18 | 65 | 263 | 53 | — |
| Typhus fever | 8 | 9 | 8 | 11 | 9 | 12 | 5 | 5 | 6 | 12 | 9 | 2 | 96 | 334 | 335 | 131 | 37 |
| Malignant fever | – | – | 1 | – | – | – | – | 1 | 1 | 1 | – | – | 4 | 17 | 76 | 12 | 2 |
| Typhoid " | 34 | 29 | 32 | 22 | 15 | 21 | 22 | 58 | 42 | 52 | 29 | 25 | 381 | 773 | 648 | 486 | 654 |
| Scarlet " | 61 | 52 | 23 | 38 | 39 | 46 | 30 | 27 | 19 | 32 | 47 | 77 | 491 | 624 | 349 | 275 | 461 |
| Smallpox | 18 | 25 | 15 | 14 | 16 | 16 | 9 | 5 | 5 | 6 | 10 | 5 | 144 | 524 | 260 | 171 | 264 |
| Measles | 14 | 2 | 9 | 21 | 34 | 53 | 44 | 25 | 3 | 5 | 4 | 7 | 221 | 54 | 90 | 82 | 109 |

| | 1863. | 1864. | 1865. | 1866. | Quarters. 1st. | 2d. | 3d. | 4th. |
|---|---|---|---|---|---|---|---|---|
| Pyæmia | 44 | 78 | 41 | 38 | 7 | 15 | 8 | 8 |
| Erysipelas | 74 | 148 | 79 | 73 | 23 | 25 | 10 | 15 |
| Puerperal fever | 29 | 43 | 27 | 12 | 3 | — | 4 | 5 |
| " convulsions | 11 | 18 | 19 | 27 | 9 | 5 | 3 | 10 |
| Fever, bilious | 8 | 9 | 11 | 15 | 2 | 1 | 9 | 3 |
| " remittent | 18 | 43 | 44 | 24 | 7 | 4 | 9 | 5 |
| " intermittent | 7 | 12 | 12 | 8 | 2 | 2 | 2 | 2 |
| " congestive | 43 | 77 | 37 | 17 | 1 | 3 | 10 | 3 |
| " pernicious | 1 | 4 | 1 | 2 | – | – | 1 | 1 |

The deaths from puerperal fever were less than those in 1865, and little more than a fourth of those in 1864.

*Cholera* first made its appearance in Philadelphia in the latter part of June, by a few cases scattered about in various distant parts of the city, of whom two died. One case of undoubted cholera occurring at this time (which did not however prove fatal) was seen by Dr. Wilson Jewell, Chief of the Sanitary Committee of the Board of Health. There had been no cholera at the Quarantine.

Great exertions were made by the Board of Health to preserve the cleanliness of the city. Physicians were requested to report the nature of the premises where they saw a case of the disease, and if it were confined, crowded or dirty, measures were taken the same day to have the neighbourhood purified by chloride of lime, soap and water, and whitewash; and by closing entirely cellars and other very badly ventilated apartments. A corps of inspectors was also employed for the purpose of discovering and reporting such unhealthy places. It is undoubtedly in great measure owing to these well-timed exertions that we owe the comparative exemption of our city from what threatened to be a fearful scourge.

The greatest mortality in any one week was 127, for the week ending Oct. 13th. The disease then declined with much greater rapidity than it had advanced. Next to October, the greatest number of deaths occurred in August.

The total mortality was 910.

As regards age, the greatest number, 199, died between 30 and 40; next, 177, between 40 and 50; none under one year.

As regards location, by far the greatest mortality was in the 17th,

18th, and 19th wards, comprising the old districts of Kensington and Richmond. This circumstance is accounted for by the fact that water is there employed drawn from the river Delaware, and consequently contaminated with the impurities carried into that stream by the sewers, and washed up and down by every tide.

The mortality in these three wards was 301, or almost a third of the total mortality from cholera in the city, in one-seventh of the population.

The number of births registered during 1866 was 17,437, an increase over the previous year of 2,009 or 12.37 per cent.

There were 18 more twin births and 39 more coloured births than in 1865.

There were more births in October than in any other month; then in August, September, and July. In April, the number was least; then in the three summer months.

Several tables which we had prepared to show the mortality of all diseases, at various ages, and for each month in the year, are unavoidably omitted from want of space.

1867. *June* 5. *Drainage Probe.*—Dr. H. Lenox Hodge exhibited a *drainage-probe*, made of silver pure enough to be perfectly flexible, and terminating at either end by an olive-shaped bulb. Its diameter is the same as that of the ordinary surgical probe, and its length six inches. A number of different sizes would at times prove useful.

It is adapted to the same class of cases as Chassaignac's "drainage-tubes," but possesses several advantages over them. Being made of silver, its presence causes no irritation to the tissues; it is not affected by any climate; it is non-absorbent and thus keeps pure and clean. Being a solid probe, the pus or blood cannot collect and block up the passage as is done in a tube. It does not swell like lint and other vegetable structures, and thus tightly close the orifice, confining the pus. *The fluid always flows along its sides and escapes.* It is readily inserted into any opening made by the knife or occurring spontaneously, and with ease may be carried to the extremity of a sinus or abscess. When inserted, it can be retained in its place by a strip of adhesive plaster; or better, when practicable, by making a counter-opening and, after carrying the probe through, bending both of its ends. The great advantage of draining an abscess and cavities containing fluids, and the many difficulties of accomplishing this, are conceded. The employment of this drainage-probe will do much to remove them. Indeed, in certain disorders, such as strictures of the lachrymo-nasal duct, this plan has long been employed with success; the fluids have been found to pass steadily along the sides of the old "style" even in tight strictures.

The drainage-probe causes so little irritation, and is of such marked benefit, that the patient himself will at once appreciate its value. Even in mammary abscess it causes no inconvenience; pus soon ceases to be formed, milk flowing along the probe instead, and the woman continues to nurse her child.

*Bromide of Potassium in the Sickness of Pregnancy.*—Dr. Packard stated that he had employed the bromide successfully in several cases of this kind, when the sickness had been manifestly due to reflex irritation of the stomach, and in which most if not all of the other remedies in common use had failed. He believed that after the removal of any gastric disorder, if such existed, the bromide would act here just as in other cases

of nervous disturbance, as, for example, in allaying neuralgia, or in producing sleep. The dose given had been the ordinary one, viz: gr. xx every three hours, until the symptoms began to yield.

The fact that the idea had seemed new to several gentlemen of experience in these matters, induced Dr. P. to bring it to the notice of the Fellows of the College.

*Nov. 6. Case in which Acupressure was applied to the Femoral Artery at the Fold of the Groin.*—Dr. John Ashhurst, Jr., said: I desire to invite the attention of the College to a case which seems to me to furnish a good example of the occasional preferability of Sir James Y. Simpson's method of acupressure over any other known means of arresting hemorrhage. While in the country during the past summer, I was called in great haste to the farmer's house, less than half a square off, to see a child who, it was reported, was "bleeding to death." I ran to the spot as quickly as possible, and found a little girl about ten years old bleeding profusely from a sloughing abscess on the inside of the right thigh, near the fold of the groin. Making digital pressure, I swept away the clots which were accumulated in the rocking-chair in which she sat, filling the space between her thighs, from her pubes to her knees. I then found that the abscess had extended under the skin to the position of the femoral vessels, about an inch below Poupart's ligament. Pressure upon the femoral artery at this point controlled the bleeding, which instantly recurred upon the pressure being removed. I had no instruments, except those in my pocket-case, no ether or chloroform, and (a still greater deficiency) no skilled assistants. Delay was most dangerous, for the loss of a very few ounces more of blood would have proved instantly fatal, and even had I been surrounded with all the appliances of a well-ordered hospital, the incisions and dissection which would necessarily have preceded the ligation of the bleeding vessel, would have been in themselves greatly to be dreaded. In this emergency I procured from the farmer's wife a strong darning-needle of more than ordinary dimensions, and keeping up digital pressure with the thumb of my left hand, introduced the needle deeply a little to the inside of the line of the femoral artery, and then, depressing its eye, carried the point of the needle beneath the vessel and brought it out about three-quarters of an inch exteriorly to its place of entrance.

The femoral artery was thus "acupressed" by Simpson's first method, immediately as it emerged from beneath Poupart's ligament. The hemorrhage was entirely controlled, and the little patient carried to her bed and made as comfortable as circumstances permitted. The attending physician, a practitioner of the neighbourhood, arrived about an hour afterwards, and, of course, took charge of the patient, whom I did not see again. I am, however, enabled to state that a slight hemorrhage, apparently brought on by injudiciously moving the patient, took place on the succeeding day, but ceased spontaneously. I presume it was from the distal end of the ulcerated vessel, the collateral circulation having probably been established during the night. These hemorrhages were but late incidents in the course of a long and enfeebling illness, the patient having for many weeks suffered from profuse suppuration and extensive bed-sores. She died without pain, and seemingly from simple exhaustion, about twelve hours subsequently to the second hemorrhage.

I have thought it my duty to report this case, especially as I have never been an advocate for the general employment of acupressure. In

the large majority of cases, I certainly think that the ligature is in every way preferable to the pin or the needle. But there are some, and I think that which I have just narrated is a case in point, in which Prof. Simpson's method seems to me to unite the requisites of treatment, *tuto, cito, et jucunde*, more satisfactorily than any other. Had it been practicable, it would doubtless have been better in my case to enlarge the wound, search for the source of hemorrhage, and apply ligatures above and below; but during this operation the patient would inevitably have bled to death.

I may perhaps remark, as a matter of some practical importance, that in applying acupressure to the femoral artery at the groin, the needle or pin should be passed from within outwards, as there is thus less risk of wounding the femoral vein.

*United Fracture of the Skull of very Old Standing.*—Dr. J. Cheston Morris presented this specimen, with the following account:—

This specimen was obtained from a man who was a patient in the Pennsylvania Hospital when my father was resident there in 1824, and who, in gratitude for his kindness and care, left him his skull after his recovery. Thirty-six years subsequently, when his death took place, his widow, then a patient of mine, sent to inform me of the fact, and to state her willingness that I should take possession of the specimen. Accordingly, assisted by Dr. Packard, I removed the head and took it to the Pennsylvania Hospital, where it was carefully examined in the presence of Drs. Norris, E. Hartshorne, Packard, and myself. A large cruciform cicatrix extended across the scalp in the direction of the sagittal and coronal sutures. This was adherent in the portion where the bone is deficient to the tissues beneath. On carefully removing the scalp, a fissure between the parietal bones and the frontal, extending across the top of the skull for four inches in length, and at the widest place three-quarters of an inch in width was noticed. This aperture was closed by a firm membrane, adherent to the dura mater. The calvarium was removed by the usual circular method, with the dura mater, exposing the brain, which presented very little evidence of abnormal condition, except that in each cerebral hemisphere there was a cavity or closed sac on the upper surface completely lined by a serous membrane and containing, the one in the right hemisphere about half an ounce, the one in the left about two drachms of clear serum. The veins and sinuses were somewhat congested, and the brain was rather harder than normal. No evidence of fracture at the basis of the cranium was detected in the recent state; but when the skull was cleaned, I found a line of union extending from the margin of the foramen magnum across the left side of the occipital bone and the petrous part of the temporal bone and obliterating the left carotid foramen. The jugular fossa on this side is very much enlarged, as though there had been a great and long-continued obstruction to the flow of the blood through it, which eventually caused the excavation of the bone from pressure. The following is condensed from the notes taken by my father:—

"*Case of Fracture of Basis of Cranium.*—B. L., æt. 16, was admitted December 28, 1824, having a few hours previously received a severe injury of his head. Riding in a heavy cart loaded with rubbish, the horse became unmanageable, and turning quickly round a corner overturned the cart in such a manner as to catch his head between the front part of it and the street pavement. There was a slight scalp wound on the back

part of the head. When I first saw him his pupils were contracted, pulse slow, stupor, but no stertor. There was effusion under the scalp, particularly near the front part of his head, and considerable hemorrhage from the left ear. His head being shaved, and a close examination made, no depression could be ascertained. He had been bled before admission. Dr. Parrish, the surgeon in attendance, was sent for. The symptoms continued, the stupor rather increasing, for about three hours, when Dr. P., having arrived, made a crucial incision over the top of the head. On turning over the flaps, great effusion of blood was found, particularly at the point of junction between the sagittal and coronal sutures. On removing as far as possible the coagulated blood, the injury was found to consist in a separation of the coronal suture, placing the joining edges of the parietal and frontal bones about the fourth of an inch from each other. Very free hemorrhage took place from the point where the suture crosses the track of the longitudinal sinus, and by the flow of blood the stupor was evidently relieved. Several portions of matter, evidently medullary, were observed to have escaped. Simple light dressings were applied to his wound, and he was placed in bed. His whole surface became cold, particularly his extremities, and he was nearly pulseless. Warm barley water with a small quantity of wine was freely administered. Stupor increasing. In about three hours reaction took place. Towards evening his pulse grew firm and tense, 140 in the minute; skin hot, and he became very restless. Ordered pulv. nitrosi ʒj: ft. pulv. x quar. sum. unam quâque horâ.

"29th, morning. Much as I left him last night. Bled him fʒviij, and directed mag. sulph. ʒss, q. quartâ ho. ad deject. procur. Evening. Stupor rather less; great disposition to tear off dressings from head. Skin hot and dry, tongue furred, pulse tense. V. S. ʒx. Salts have operated. Has taken no nourishment except the barley-water. Dr. P. saw him and directed a continuance of treatment. 30th, morning. Evidently better; pulse less frequent and has lost its tension. Skin dry and warm. Tongue coated with white fur. The room to be kept cool, dark, and quiet. Drinks freely of soda water and takes small quantities of barley-water. Suppuration has taken place in the wound; no escape of any kind from the fissure. 31st, morning. Pulse nearly natural; skin hot and dry; tongue still furred; no stupor, but great restlessness. Directed mag. sulph. ʒss, ut antea. His pupils have assumed their natural size, and contract and dilate on exposure to light or its exclusion. Purulent discharge from ear: has been allowed some roasted apples. Jan. 1st. During the night, hot and feverish; tongue is furred, and he is very restless; salts in full operation; to drink freely of cold barley-water, or mist. effervesc. ʒss, quâque horâ. Evening. Suppuration from wound increased, and he is now composed; pulse 100, free from tension; neither stupor nor delirium. 2d, morning. More easy; skin natural; pulse 90; tongue furred; still to adhere to rigid diet. Evening. His bowels not having been moved for twelve hours, directed mag. sulph. ʒij, ant. tart. gr. ij, succ. limon. fʒss, aquæ ʒiv, sum. ʒss, q. s. h. Dr. P. saw him soon after and directed in addition V. S. fʒvj. 3d, morning. Notwithstanding depletion last night, pulse full and tense; complains of sharp lancinating pain in temple, for which he was again bled fʒx, to his great relief; his bowels having been once opened during the night, the attendant discontinued the medicine; directed it to be resumed and continued till his bowels should be freely moved. Night. Bowels freely operated upon; fine healthy granulations around edges of wound. 4th, morning. Again

complains of pain in head; pulse rather tense; wound healthy. Night. Same saline mixture resumed. 5th, morning. Perfectly free from febrile symptoms; wound granulates finely; I now observed for the first time the parietal and frontal bones, yielding to the impulses of the brain, moved freely on each other; this was also the case when he opened or shut his mouth; in dressing his head, found that much of the pus, which has been abundant for a day of two past, escapes through the fissure from the inside of the cranium. Night. Slight delirium: V. S. f℥vj. 6th. This morning much better; delirium gone; pulse feeble; skin cool; tongue clean; bowels open; allowed rye-mush; no other change. Evening. Slight disposition to delirium, which went off during night, and he slept comfortably. 7th. Same; ordered mag. sulph. ℥j. 8th. Continues to do well; appetite almost ravenous; allowed a little thin gruel. Evening. A little feverish, and complains much of head. Mag. sulph. ℥j, to drink solution of bitart. potass. till bowels freely open. 9th. So soon as the salts administered last evening commenced operating he felt much relieved, and is this morning cool and comfortable; pulse natural; wound healthy; still motion between the fragments, and escape of matter from within. For accession of fever in after part of day, he was directed mist. efferv. f℥ss, qu. semihorâ. 10th. Still better, though much purged by salts taken on 8th. 15th. Gradual improvement since last date; granulations have shot through fissure and prevent any further motion. 22d. Twenty-sixth day since accident; granulations cover completely the exposed bones; his diet was to-day improved by being allowed vegetable soup. From this time he continued to improve; the most unpleasant symptom being double vision; he is able to see perfectly with either eye, but with both sees double; to obviate this, he wears a blind over one eye; suppuration continued from the ear; he left the hospital Feb. 14. About the latter end of March I took from the anterior part of the parietal bones a portion about three inches in length and one and one-half inch in breadth, consisting of both tables. A number of small pieces were abstracted at various times. By the first of June his health was completely restored, and no complaint existed but of the loss of the function of the left ear; sight completely restored."

From this period until March 8th, 1830, he remained in good health; but then began to suffer from attacks of epilepsy, "which (Mrs. L. writes to me) Drs. Parrish and Morris supposed might be caused by pressure of some small portion of bone. Vegetable diet, anti-spasmodics, bleeding and cupping failed to give any relief. In 1837 the attacks returned at intervals of two weeks, except at midsummer and midwinter, when the interval was six weeks. Disposition restless. In 1842, slight symptoms of insanity showed themselves, the epileptic paroxysms having continued as usual, except during his prostration by an attack of diarrhœa. In 1845 he would take long rambles in the country, generally followed by a fit on his return; he took great pleasure in these rambles, and said that walking on the grass did not hurt his head as walking on pavements did. Excitement, or motion with the arms, or stooping, he always complained of as causing suffering. If seized with a convulsion while walking or standing, he would fall backward; if while sitting or lying, he would become stiff and strike his elbows." In 1848 he became decidedly insane, subject to fits of violent excitement, and suspicious of his family, so that it became necessary to confine him at the Trenton State Lunatic Asylum, where he remained twelve years, gradually sinking into a state of dementia.

I present also the fragments of the parietal bones, removed three

months after the accident. A comparison of them with the fissure in the cranium will show how much the skull has grown since the fracture.

The severity of the injury to the skull and brain in this case is not paralleled in any other instance of recovery that I am acquainted with, except perhaps that reported by Dr. J. M. Harlow. (See number of this Journal for April 1849, p. 546, and also by Dr. H. J. Bigelow in number for July, 1850, p. 13.) Dr. Jeffries Wyman informed me, in 1860, that this man had been a few years previously still in good health, and employed as a stage driver in Peru. It would be interesting to know if he has still escaped the usual fate of all those who have had mutilated brains, epilepsy, or insanity.

*Dec.* 4. *Case of the late Dr. C. W. Pennock.*—Dr. J. C. Morris read the following paper:—

It was the earnest and frequently expressed desire of this highly esteemed gentleman that his case should be studied with care, and the results recorded for the advancement of science and the possible alleviation of the sufferings of those who may be hereafter similarly afflicted. In accordance, therefore, with this desire and with regret only for a feeling of inadequacy on my part to do full justice to many of its remarkable features, the following account is presented.

Dr. Pennock was a man of large bony frame and excellent muscular development, of cheerful and benevolent disposition, clear, comprehensive mental perceptions, and in the fullest sense a philanthropist. Born of a vigorous, healthy, and long-lived family, and reared in the country under circumstances of comparative affluence, he at first devoted himself to agriculture and placed himself upon the farm, where he exerted himself so laboriously in ordinary farm labour as to give rise to great anxiety lest he should ruin his health. Not content with this, he opened a school for coloured people (in whose welfare he was deeply interested), in the evenings, teaching it himself after the labours of the day. These facts are mentioned as an index of the character of the man and as exhibiting the whole heartedness with which he threw himself into whatever he undertook. Finding the sphere thus opened before him insufficient for his benevolent wishes, he entered upon the study of medicine, which he prosecuted with the utmost zeal at the University of Pennsylvania, and, after graduating in 1829, visited Paris, where he remained until 1833. He then returned to Philadelphia to engage in practice. The assiduity with which he performed his duties in the Dispensary and at the Almshouse will be readily recalled by his colleagues: his attentions to the sick poor were unwearying and incessant. But it was to the scientific pursuit of his profession that he turned with the greatest eagerness, devoting himself to the study of auscultation and percussion, which were then attracting the attention of the medical public. Dr. Pennock repeated the experiments and vivisections of Dr. Hope and edited an edition of his works with copious notes. In the midst of these labours, he began in 1843 to complain of a sense of weight and numbness in his legs, which obliged him to forego his active duties and endeavour to recruit his failing powers. Everything which rationally promised relief in the way of treatment was tried until 1849, when he finally determined to withdraw from active life. Of his condition at that time and subsequently, Dr. Worthington, of West Chester, under whose care he placed himself, writes:—

"In the year 1849 Dr. Caspar W. Pennock came to reside in Howellville, Delaware County, having left the city to enjoy a country residence, and receive

the benefits which such a location might afford. He had then been indisposed for a period of six years. During the year 1843 he was taken with a numbness in the left leg between the knee and ankle. The sensation produced was similar to that of a tight band around the leg about three or four inches in width. He had been laboriously occupied during the summer with professional duties, so as to tax, to an unusual extent, both his mental and physical powers. He also suffered at times, during the season, with a slight diarrhœa. The feeling of numbness and sense of heaviness in the limb gradually increased under the treatment adopted, which consisted principally of counter-irritation by mustard and dry cups. Galvanism was also used. No treatment of this kind seemed to control the disease, which gradually increased until it extended to the whole limb. He was induced to try the '*cold water*' treatment, which seemed to retard the progress of the disease more than any other remedy. The disease, however, still advanced, and in the course of a few years began to exhibit itself in the right leg, presenting the same symptoms as had been observed in the left. While employing the water treatment, it was accompanied with much exercise, and especially on foot, which probably was rather injurious than otherwise.

In 1853 he was attacked with pain, soreness, and swelling of the lower extremities, accompanied with febrile symptoms, and presenting all the ordinary symptoms of *phlegmasia dolens*. It ran a course of about three weeks, and under the usual treatment for this disease subsided—leaving him, however, ever afterwards unable to walk. From that time he was entirely confined either to the sitting or horizontal position. For several years the warm weather seemed to diminish his strength and increase his paralysis, so that during the winter he did not recover the loss sustained by the heat of summer.

When the disease reached the upper extremities, it began in the left arm, this being the side which was first and most affected. From the left arm it gradually extended to the right, until finally both arms became so much disabled as to prevent him from feeding himself during the last ten years of his life. Sensation was never lost in the paralyzed limbs, though somewhat diminished.

Little treatment for the paralysis was used in his case during the time he was under my observation. A careful system of living, strict attention to the condition of the alimentary canal, with good ventilation of his chamber, and, in suitable weather, a removal for a portion of the time into the open air—dry frictions to the limbs, which were faithfully applied, constituted the principal means employed in the medical treatment.

About five years before his death he had an attack of retention of urine, which was regarded as a partial but temporary paralysis of the bladder. The catheter had to be used for several days. With the use of diuretics, consisting of an infusion of buchu and uva ursi, and sweet spirits of nitre, this disease soon subsided, without any return.

A remarkable feature in his case, with such a long and constantly increasing paralysis, was the uninterrupted brightness of his intellect. His mind was always active, taking a deep interest in his profession, to which he was passionately devoted; and manifesting the deepest sympathy for the afflicted, and the warmest love for his numerous friends, with an earnest and patriotic solicitude for his country in her trials during the late rebellion. This clear and happy state of mind continued up to the latest period of his life.

About three weeks before his death he was attacked with other symptoms, and in my absence became the patient of Dr. Jacob Price, to whom I must refer for an account of his last illness."

Dr. Price writes us, "I was called to Dr. Pennock on the 20th of March last, and found him labouring under symptoms of influenza; there was also deficient action of the kidneys, and some tenderness to the left of and below the umbilicus, with a tendency to diarrhœa. The febrile action was slight. The bronchial symptoms abated somewhat after a few days, but the enteric steadily increased. Tympanitis was present from the first; it was, to a certain extent, his usual condition, although now much increased. The discharges were at first somewhat feculent, occasionally a transparent, colourless mucus; later they became dark and watery—four to six daily. The intestinal pain was not severe, unless the

abdomen was pressed upon or handled. The tenderness, in the region indicated, was at times exquisite. His mind, from the first, was impressed with the idea that his disease was typhoid fever. The enteric tenderness, diarrhœa, tympanitis, bronchial disease, and sudamina (which were slightly present after the second week) gave support to this view, although the location of the tenderness, the absence of rose-coloured spots, and the condition of the tongue, did not sustain it. He was evidently, however, labouring under disease of a zymotic character. The pulse ranged from 80 to 110; his mind was always clear; his stomach was weak, and at times scarcely able to take the simplest nourishment.

Medicines (to which he was always very averse) were used sparingly. An alkaline diuretic for one day at first; afterwards strychnia one-eighth grain four times a day for several days; syr. lactucarii, with ext. cinchonæ, and, after the diarrhœa increased, bismuth, were the main measures resorted to. The strychnia seemed to control somewhat the tympanitis and the bronchial trouble, and the bismuth evidently restrained the diarrhœa. It was difficult to get him to take stimulants, and they were used to a very limited extent.

A specimen of urine, about a week before his death, showed no deposit when heated, or treated with nitric acid. Barreswil's test caused a slight flocculent green deposit, but no brown precipitate whatever. Microscopical examination showed a copious deposit of crystals of triple phosphate, and a few granules adherent endwise—probably urate of ammonia; also amorphous deposits of the same. His death occurred on Tuesday, the 16th of April, 1867, at 3 A. M. His mind was clear to the last."

*Autopsy*, performed April 18th, 1867, by Dr. John H. Packard, in the presence of Drs. Worthington, Price, and Massey of West Chester; notes taken by myself.

*General appearance.*—Body well formed—very slightly emaciated. Œdema of the left leg (slight): and also of both feet. Skin reddened on back from the neck to the sacrum. Left lateral and anterior angular spinal curvature, at 7th cervical to 2d or 3d dorsal vertebræ.

*Examination of cerebro-spinal axis.*—The body being placed in the prone position, an incision was made from the vertex downward, over the occiput and the spinous processes; another incision running forward behind each ear permitted the throwing forward of the scalp and downward of lateral flaps so as to expose the skull; the occipital bone was much congested; the lambdoidal and posterior part of the sagittal sutures were very vascular. A vascular spot was noticed on the right parietal bone about $1\frac{1}{2}$ inch from the sagittal and coronal sutures. On removing the calvaria a large quantity (at least six ounces) of serum (reddish from admixed blood) escaped. I believe this to have been originally clear, as that which remained in the ventricles and spinal canal was so. Some congestion of parietal arachnoid, and of pia mater. The *cerebellum* was soft in consistence, with arbor vitæ well defined; slightly congested. The *cerebrum* more vascular and rather softer than usual. Corpus callosum, fornix, and crura cerebri slightly softened; the latter were torn in being removed. Olfactory bulbs much softened so as to present a ragged appearance. Some fluid in the lateral ventricles—no third ventricle; the choroid plexus congested and presenting numerous pouches filled with serum. The surface of the lateral ventricles seemed as though somewhat softened by soaking in the serous fluid. In laying open the spinal cavity diminished mobility was noticed between the 3d and 4th and the 5th and 6th cervical vertebræ. The medulla spinalis was surrounded with a considerable amount of clear serous fluid, and congested vessels were noticed on its surface. It was laid aside, as were the corpora striata and thalami, portions of the cerebrum, the cerebellum, pons Varolii, and medulla oblongata, for microscopic investigation.

*Examination of the abdomen.*—On making an incision through the

walls of the abdomen (the body having been replaced on the back) the sigmoid flexure of the colon was seen very much distended with extremely offensive flatus; it rose nearly to the epigastrium, was highly congested and inflamed, in some parts almost grayish, and contained besides the flatus dark grumous bloody fluid, and a layer of coagulated blood on the mucous surface. The large and small intestines and mesentery were thickly strewn with subperitoneal tubercles of the yellow caseous form. The gall-bladder was filled with gall-stones and pus—the latter derived by a fistulous sinus from an ancient abscess probably tuberculous with firm walls and somewhat caseous contents situated in the liver. The surface of the latter presented a pit-like depression on its antero-superior surface a little to the right of the notch. The liver was softened and friable: the ramifications of capsule of Glisson well-marked. The kidneys were mottled, congested, and softened. Supra-renal capsules healthy. Atheroma of bifurcation of aorta. A good deal of serum in pericardium. The heart was much softened and degenerated—no valvular disease.

*Thorax.*—The left lung was adherent at base and posteriorly at the upper part. Tubercles in process of softening were found in abundance at the apices of both lungs.

*Skeleton.*—The whole spinal column was much softened—so that a scalpel would readily cut the bodies of the vertebræ. A piece was thus cut out of one of the lumbar vertebræ. The same condition was found in the trochanter, patella, head of the tibia, and in the tarsal bones. At the lower extremity of the sacrum was found a spinous process, apparently that of the last sacral vertebra, projecting backwards within a quarter of an inch of the skin.

*Microscopical Examination.*—Dr. S. Weir Mitchell writes as follows:—

"The portions of the nervous system submitted to me for examination were parts of both cerebral hemispheres, anterior half of cerebellum, the crura cerebri, corpus striatum, optic tubercles, and the pons. Also the medulla oblongata and the entire spinal cord, with a piece of the left brachial nerve. These specimens were in good order—had been removed two days after death—the body having been kept in ice.

The parts above named, with the exception of the spinal cord and oblong medulla, were found to be free from any very notable alteration, excepting that throughout, their bloodvessels were slightly but very uniformly affected with oleaginous degeneration. There were no evidences of pathological softening.

At the upper part of the posterior face of the medulla oblongata, in the mouth of the fourth ventricle was a small, rough concretion measuring two lines in diameter. It was irregularly rounded, and lay between the restiform bodies and posterior pyramids, where they divide to pass into the walls of the ventricle. This foreign body was imbedded in the membranes, and made such pressure on the dividing strands as distinctly to alter their form. This was best marked on the left side. No pressure was made by the mass upon the floor of the ventricle, nor were there at any of these points the least signs of inflammation.

I failed to discover any lesion in the medulla oblongata, but the cervical and dorsal regions of the spinal cord were extensively affected. When fresh, this disease presented a series of gray, translucent spots of irregular form, and, sometimes, almost perfectly transparent—a gelatinous alteration, atrophic in character, since the spots in question were always somewhat hollowed out so as to lie below the common level of the cord and to indicate loss of substance.

The microscopic examination of these parts, which lay chiefly in the white portions of the cord, showed: 1st, total absence of normal nerve tubes and nerve cells; 2d, finely granular matter, molecules, and small globules of fat in great quantity; 3d, no granulation corpuscles; and 4th, numerous fibres which may have been degenerated nerve tubules (atrophic alteration) or connective tissue fibres, such as are found in spinal tissues.

The vessels of the cord were everywhere altered by fatty deposits, which, if I mistake not, were singularly conspicuous in the near neighbourhood of the atrophied parts. I was unable to detect a single vessel within the tissue so altered. Elsewhere, as I have said, the state of the vessels was remarkable, many of them being hidden from view by dense masses of fat molecules, through which they passed. the oil being not only deposited in their walls, but grouped in masses about their tracks.

The exact situation of the gray gelatinization of the cord was studied with the most minute care. Excepting in a small spot which invaded the right posterior horn of gray matter at the level of the first cervical nerve, and a like spot on the left side in the same situation, the change respected the posterior horns and columns of the cord. In the two localities above described the microscopic changes were the same as elsewhere.

The lateral columns were extensively diseased, the spots, as a rule, lying between the anterior nerve roots and the central line of the lateral columns, affecting, therefore, most largely, the parts nearest the anterior nerve roots. (See Figs. 1 and 2.)

. . In three places the changes passed across the anterior columns. From the seventh dorsal to the eighth dorsal nerve a large spot extended across both the anterior columns. Its depth and form are indicated in Fig. 8. About the level of the tenth dorsal and at the second lumbar nerves two spots were found crossing on to the right and left anterior columns respectively, but not involving the whole width of either. Below these points I found no patches in any part of the cord.

The most extensive lesions were in the lateral columns of the cervical cord. Their surface extent is shown in the accompanying diagrams, Figs. 1 and 2. Their depth and the parts internally affected may be seen from Figs. 3, 4, 5, 6, and 7, better than from any descriptions.

Fig. 1.

*Left.*

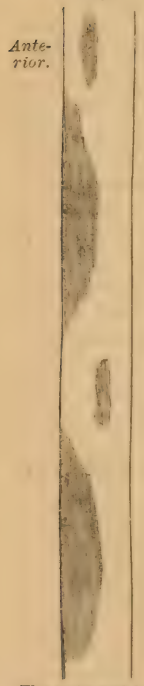
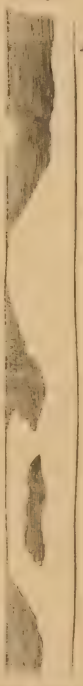



Fig. 2.

*Right.*




The right and left lateral surface view of the lesions of the cervical cord.

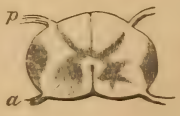
Fig. 3.

*3d and 4th.*

Fig. 4.

*5th.*

Fig. 5.

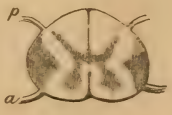



*6th.*

Fig. 6.

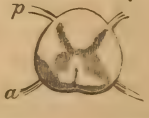
*7th.*

Fig. 7.




*8th.*

Fig. 8.




*Between 7th and 8th Dorsal.*

Lesions in the cervical region at the level of the nerve roots, indicated by the numbers.

In the dorsal region the spots were abundant but less numerous than above, about half as many for equal areas of tissue. In many portions both of the cervical and dorsal regions the atrophy involved the point of entry of the anterior nerve roots and the gray matter of the anterior horns, as may be seen in Figs. 6, 7, and 8.

The central canal of the cord was distinct throughout, a condition usually lost during childhood.

The portion of the brachial nerve examined was in a state of remarkable integrity and presented very few atrophied fibres.

As the reports of this case state, there were the following symptoms to be explained by the condition of the nervous system:—

1. Integrity of mental and moral manifestations.
2. Absolute loss of voluntary motor power below the head, or rather below the neck.
3. Sensation, nearly perfect.
4. Respiration, good; reflex motion preserved and exhibited in the form of spasm on irritation of certain parts of the skin.

I should have thought it unlikely that there could be perfect mental power with so general an affection of the vessels of the brain; such, however, was the case, and it is interesting to observe that there was certainly no morbid softening.

The loss of volitional control is easily accounted for by the amount of disease present in the anterior columns and cornua, and in the *general* alteration of the anterior part of the lateral columns of the tissues immediately in the tracks of the emergent anterior nerve roots.

Sensation was entire, because only in one point were the posterior horns and columns at all injured. Even at this place the lesion was not more than three lines long on the left side, and was not a perfect atrophy on the other, so that it was insufficient to affect conspicuously the function of general feeling."

The phenomena presented above may be classified under three heads, viz: 1. The alterations in the nerve centres; 2. Alterations in the nutrition of the various other organs; and 3. The immediate cause of death.

1. The condition of the encephalon may be considered as nearly normal, except the presence of an excessive quantity of serous fluid, the fatty accumulations around the smaller bloodvessels, the concretion in the mouth of the fourth ventricle, the absence of the third ventricle, and the slight softening probably due to the general lowering of the nutritive functions throughout the body. In connection with the clearness of intellect manifested throughout his disease of twenty-four years' duration and up almost to the last moment of life, notwithstanding the probable existence of a large quantity of serum in the ventricles and arachnoid cavity, our attention may well be drawn to the cases described by Mr. Hilton, in his papers "On Disease and Mechanical Rest," published in the *Lancet*. The probable want of any communication between the lateral and fourth ventricles would then account for no difference being observable in the amount of paralysis in the erect or prone position. Dr. Price's statement that no sugar was to be detected in the urine is interesting in connection with the existence of the calcareous mass in the fourth ventricle.

As regards the condition of the spinal cord, nothing can be more striking than the confirmation it gives of the views of Brown-Séquard as to the mode of transmission of voluntary motor power through the antero-lateral and anterior columns. If we suppose that the long-continued over-exertion of his physical powers had caused a destruction or atrophy of a portion of the motor cells of the anterior cornua, followed by atrophic retrogressive gelatiniform degeneration of the nerve tubules proceeding from these cells, and that this process was repeated as the

remaining cells were brought into excessive action to maintain the functions of life, a result more closely resembling that observed in this case would be obtained than that from any other hypothesis I can form.

A most noticeable feature in the case is the absence of ordinary white or red softening.

2. The processes of nutrition in the osseous, muscular, and visceral organs were evidently enfeebled, though there was no wasting. But the softening of the bones and their congested appearance, the fatty degeneration of the heart, liver, and kidneys (though apparently recent, at least not far advanced), and the tubercles disseminated over the sub-peritoneal surface of the bowels and in the lungs, all point to a lowering of the organizing power of the system—a failure of vital force. In this connection it may be remarked that Dr. Pennock had confined himself to an almost exclusively vegetable diet for some years, under the idea that, as he could take no exercise, he ought to avoid animal food. No tubercular predisposition exists in his family: many of them have suffered from gout: an aunt was afflicted for many years with a somewhat similar paralytic affection, and another member of the family had an arrested development of one leg—probably of nervous origin.

3. There can be no doubt that the intensely inflamed, semi-gangrenous condition of the lower bowel was the immediate cause of death. His system, in its enfeebled condition, not being able to sustain the process of inflammation, succumbed readily to a cause originally slight, such as the then prevailing epidemic of influenza.

1868. *Feb. 5th. Report on Epidemics and Meteorology.*—Dr. William L. Wells, by appointment, presented the following report:—

The meteorological observations upon which my remarks in the present report are based, were taken by Prof. J. A. Kirkpatrick, A. M., of the Central High School, and may be found published in full in the journal of the Franklin Institute, of this city.

The year 1866 had been remarkable for extremes of temperature both of heat and of cold. The thermometer reached a higher point in summer, and a lower one in winter, than at any time for at least fifteen years. The year 1867, on the other hand, while the *thermometer* had a less range by 26° than the preceding year (91° Fahr. being the highest, and 8° the lowest temperature), was characterized by *barometric* extremes greater than at any time for at least sixteen years. The mean daily range of the barometer was also remarkably great, being 0.187, to 0.157, the mean of sixteen years; and this was not caused only by the excessive variations in one or two months, but was the case in every season of the year.

The mean temperature of the year was 53°.41, or more than a degree less than the average, which is 54°.36.

The mean of the barometer was 29.978, while the average height for sixteen years was only 29.866.

62.935 inches of rain and melted snow fell in 1867; 16 inches more than the average fall, 46.926.

The lowest point at which the barometer stood during the year was 28.778 on the 8th of May. It reached its highest point on the 11th of February, when it stood at 30.970; after which there was a long continuance of rainy weather, although the rain was not sufficient to cause floods. The rain in February was 4.82 inches, the average being 3.277; and in March it was 5.67, the average being 3.419 inches.

The mean temperature of March, 37°.58 Fahr., was very much below the average—40°.90, chiefly owing to a period of steady continuance of cold from the 15th to the 20th. There was a deep snow on the 16th and 17th.

There was a great freshet in the Delaware and Schuylkill on the 8th of May, and another freshet in the Schuylkill, which did a great deal of damage, on June 17; but August was most remarkable for excessive rain, as 16.84 inches fell, 4.52 inches being the average for seventeen years. On one day alone, the 15th of August, 7 inches fell, or three times as much as fell in the whole month in 1866; and the water the next day rose to nine feet on the dam at Fairmount.

In the three summer months nearly 31 inches of rain fell, 2½ times the average, although in July there was a little less than the average.

There was a severe hail-storm on September 25, which was very widely extended, for although there was only a rain-storm at the time six miles north of the central part of the city, yet hail fell in New York city, and up the North River, three hours before it began here.

The average temperature of summer was 74°.05 Fahr., more than 1½° below that of 1866, 75° 63, and 1⅓° below the average temperature of summer for sixteen years—75°.38.

If we examine into the relation between the heat of the hottest month, July, in the past seven years, and the total mortality from diseases of the stomach and bowels in the same years, we find that in 1866, when there occurred the hottest July (80°.72 being the mean for the month), there was also the greatest mortality from those causes—3634. 1865 was second in both respects, 78°.29 and 2570; 1863 and 1864 came third and fourth as respects the heat of July—76°.99 and 77°.61; and fourth and third respectively as to the mortality, 2335 and 2413; while the three remaining years, 1861, 1862, and 1867, although when compared with each other they do not follow the rule, yet as compared with the other four they show the least heat (76°.10, 75°.60, 76°.09), and also the least mortality (1803, 2280, and 2095). This relation holds good whether or not we include Asiatic cholera, and also whether or not we count marasmus among the other diseases of the stomach and bowels.

On examining the relation between the heat of the whole summer, or the whole year, and the same diseases, the correspondence does not appear to the same extent, even as regards the summer months, and, as regards the whole year, hardly or not at all.

*Births.*—The number of births registered at the office of the Board of Health during 1867 was 17,007, 330 more than in 1866. The excess of male births amounted to 787 or 9.7 per cent.

It has been found that the proportion of female conceptions is often increased at times of great depression, as for example from financial panic, epidemics, &c.,[1] and as cholera prevailed in Philadelphia from July to November, 1866, it is a matter of interest to determine whether the proportion of the sexes born nine months after that period would be changed.

The epidemic was slight, and consequently we could not expect to find any very marked change.

The excess of male births in April, nine months after July, when cholera began, was only 7.83 per cent., or decidedly below the average.

[1] See a paper published by Gouverneur Emerson, M. D., in the American Journal of the Medical Sciences for July, 1848.

The excess in the following month, nine months after that in which the epidemic was second in severity, was only 4.4 per cent., or less than in any other month except September, when there were only 3 more male than female births:—this being nine months after December, one of the healthiest months of the preceding year. In June the excess of male births was 17 per cent. or more than in any other month, and in July, nine months after the period of greatest severity of cholera, it was just below the average, or 9.5 per cent.

We thus find here a slight change, corresponding with what we might expect from the depressing influence of cholera, but at the same time we see the influence of some other undetermined cause.

*Deaths.*—In 1867 there were reported in Philadelphia, at the Board of Health Office, 13,933 deaths—1 death in 54, or 1.85 per cent. of the total population, taking it at 750,000, which is believed to be very near the reality. This is a diminution of 2870 from the deaths reported in 1866, when cholera prevailed; and as that disease caused in that year only 910 deaths, it shows a positive diminution of nearly 2000 independently of that. The contrast with 1865 and 1864, when there was no great epidemic, is even more remarkable, as in the first-mentioned of those years there were 3236 more deaths; and in 1864, 3649 more deaths than in the year just past. In 1864 there were more deaths than ever before or since in this city. In no year since 1860 have there been so few deaths in Philadelphia as in 1867.

The deaths among males amounted to 7215; among females to 6718; and this excess of males, amounting to 497, was (except 38), entirely among minors, as 3914 males died under 20, and only 3482 females—while among adults there were respectively 3274 and 3236.

The number above given as the total includes the still-born—780, or 5.6 per cent. of the whole number, and those who died in the country and who were buried in the city, 493 in number. On deducting these we have remaining as the deaths in the city, 12,660—one in 59 of the total population, or 1.68 per cent. Of those born alive, more than one-fourth, or nearly 27 per cent., died before attaining the age of one year; and 11 per cent. of the remainder in the following year. At the age of 20, half of those born alive would be dead, judging from the rate of mortality in the past year, the period between 10 and 20 being by far the most healthy, as more than nine-tenths of those who live until 10, attain the age of 20. The risk of death in the following decade would be 22 in 100: 23 in 100 die from 30 to 40, and in the succeeding periods of ten years, 26.17, 32.57, 44.15, and 60.57 per cent of those who in each instance attain to the beginning of the decade. This brings us to the age of 80, when we find that only 16.55 in 100 of those who reach that age live ten years longer.

On comparing the different periods of the year, we find that more deaths occurred in July than in any other month, the mortality being 1795, or 12.88 per cent. of the total mortality; while November was the healthiest month, only 871 dying—6.25 per cent. of the whole, or less than half of those who died in July. This contrast was especially caused by diseases of the stomach and bowels, and this above all among children, as three children died in July to one in November; and, under two years, nearly four to one. Among adults the greatest mortality was in January—749; and in August and September fewest died, viz., the same number, 449,

in each month; while in June 464 died, or one less than in November, when the *total* mortality was least.

January was not only the month in which most adults died, but also (next to July and August) that in which most children died; and it was the month in which the total mortality stood second.

The diseases which more especially caused this excess in January, were, 1st, *phthisis pulmonalis*, which caused 224 deaths—11.5 per cent. of the total mortality from that disease, and more than twice as many as were caused by it in August, viz., 104; 2d, pneumonia, which caused 110 deaths, exceeding by 8 the whole number of deaths from that cause in the four months from June to September inclusive; and 3d, scarlet fever, which caused 79 deaths, or 17 more than in the last five months of the year put together. After January more adults died in May than in any other month; then in October, and then in July.

The total deaths from phthisis, which, as usual, was more fatal than any other disease, amounted to 1947—three more than in the preceding year; but, with that exception, less than in any year since 1861. As regards the sex of those who died, we find 942 males and 1005 females—the males being in excess in each of the first three months of the year, and the females in all the remaining months. The ratio of the deaths from this cause to the total deaths (excluding still-born) was 14.80 per cent., or 1 in 6.75.

More deaths took place between the ages of 20 and 30 than at any other decennial period, viz., 593; then between 30 and 40, 451; and after that, between 40 and 50, 297; between 10 and 20, 186; between 50 and 60, 170; and between 60 and 70, when 114 deaths took place; 91 died before the age of 10, and 45 over 70.

Next to phthisis, the diseases which were reported as causing the greatest mortality were—

| | Deaths. |
|---|---|
| Cholera infantum, which caused | 862 |
| Pneumonia | 695 |
| Debility | 648 |
| Convulsions | 584 |
| Marasmus | 549 |
| Dropsy (counting all the varieties) | 487 |
| Old age | 420 |
| Inflammation of Brain | 394 |
| Disease of the heart | 369 |
| Scarlet and typhoid fevers, each | 367 |
| Congestion of brain | 286 |
| Inanition | 252 |
| Palsy | 231 |
| Disease of stomach and bowels | 217[1] |

Cholera broke out October 18th, suddenly, in the United States frigate Potomac, the receiving-ship at the Navy Yard. Two men were attacked in the evening and both were dead before the sun rose next day. The ship was at the time, and had previously been kept, in a cleanly condition. On the following day three men were attacked, and on the 20th, eight. All the healthy men were then removed to two other vessels, and a fourth vessel sent for, which was used after the 23d as a hospital ship: but in spite of this, 14 new cases occurred on the 21st, and on the four succeeding days 6, 8, 6, and 2 respectively; after which time no new case of

[1] For full tables of mortality, see the Report of the Board of Health of the City and Port of Philadelphia for the year 1867.

collapse occurred, and in a couple of weeks more the epidemic was at an end. No death took place after the 31st. There were in all 76 cases and 30 deaths, out of a total of 502 men, who composed the officers and crew of the vessel at the time of the outbreak of the epidemic. Energetic measures were taken at the beginning and afterward to disinfect all the vessels.

The total mortality in the city in October from cholera was 35, 5 of whom died in the old district of Kensington, which is still supplied by the Delaware water, polluted as it is by the discharges from the sewers. Two cases of cholera originated in the County Prison, about the same time in October that the disease made its appearance at the Navy Yard, and both died.

Subsequently to October, 14 deaths were reported from cholera, 9 in November, and 5 in December; of these 1 occurred in the First Ward, in which the Navy Yard is situated, and 12 in that small part of the city supplied by the Delaware water, and in which, as mentioned in my last report, one third of the whole number of deaths from that cause in 1866 occurred, although it only contains one-seventh of the population of the city. This district is more than two miles distant from the Navy Yard.

Previous to October, in 1867, only 8 cases are reported in the lists of interments; of whom 3 died in the country, and were buried in Philadelphia, and of the remaining 5, 2 were in Kensington, and 1 (which occurred in July) was in the vicinity of the Navy Yard, There were no deaths from cholera between the months of July and October; and although every effort was made to discover whether the epidemic at the Navy Yard might not have originated by contagion, no way in which this could have occurred was discovered. The possibility was referred to, in the official report on the subject, of its having originated in consequence of the employment by the crew of Delaware water to a limited extent, although the pure Schuylkill water was that which was chiefly used.

On the 2d of November, an epidemic of cholera began at Lancaster, which was popularly ascribed to the employment in an iron foundry there of two men, who were said to have deserted from the Philadelphia Navy Yard. The first case was the foreman of those works. There were in all 12 deaths.

In Reading a slight epidemic was ascribed to a similar cause.

I have stated above that in October 30 deaths took place at the Navy Yard, 5 in Kensington, and 2 in the County Prison, and yet the records of the Board of Health show only 35 deaths for that month. This discrepancy may be accounted for by the fact that these Board of Health reports state the ward from which the body is buried, and not that in which the death took place, so that some of the Navy Yard cases may be reported at the Board of Health as in another ward; and also that the Board of Health reports the date of the interment and not that of the death, so that a Navy Yard case reported for October by the authorities there, may have appeared in the health reports for November.

The deaths from the various low and malignant forms of fever, including cerebro-spinal meningitis, typhoid, and typhus were greatest in the second quarter of the year, viz., 188, and least in the last, or 126. The total mortality in the year from these causes was 616, or a little more than in 1866, when there were only 574, but less than half the mortality in 1865, viz., 1321.

The total number of deaths from variola in 1867 was only 48 to 144 in

the preceding year, and 524 in 1865. Of these 48 deaths, 22, or nearly half, occurred in the first two months of the year.

The epidemic of *diphtheria* also continues to wane. There were 119 deaths from this cause, to 192 in 1866, and 260 in 1865.

There were 83 deaths from *measles* to 221 in 1866, 54 in 1865, 90 in 1864, 82 in 1863, 109 in 1862, and 74 in 1861, showing a change in 1867 to about the usual mortality, from the year before when it was far more fatal than for many years, and the year before that, when the mortality was considerably below the average.

Of all the deaths reported from *cancer*—200 in number—not one was of a person under the age of 20. The greatest number—112—died between 40 and 60, and just as many in the first as in the second half of that period.

The deaths from *croup* were 185, decidedly fewer in number than had been the case for more than ten years. There were more females than males, contrary to the usual rule. In August there were only 3 deaths from croup, and in September 4. The highest number in any one month was in December—35, then in October—25; January, 22; and April, 21.

As was the case in phthisis, more males than females died in the first few months of the year, while the case was reversed afterward. 72 died between 2 and 5; 63 between 1 and 2, and 26 under 1 year.

The diseases which proved fatal to very young children more especially were—

1st. Cholera infantum, which caused 843 under 2; this including all who died of the disease except 19, and these were all under 5 years. 629 out of the 843 were under 1 year.

| | | | | | |
|---|---|---|---|---|---|
| 2d. | Convulsions, which caused | 478 | under | 2 | (404 of them under 1). |
| 3d. | Marasmus | 474 | " | 2 | years. |
| 4th. | Debility | 411 | " | 2 | " |
| 5th. | Pneumonia | 254 | " | 2 | " |
| 6th. | Inflammation of brain | 233 | " | 2 | " |
| 7th. | Inanition | 199 | " | 2 | " All but 7 under 1 year. |
| 8th. | Congestion of brain | 120 | " | 2 | " 93 of them " 1 " |
| 9th. | Asphyxia | 109 | " | 2 | " All but 1 " 1 " |
| 10th. | Dropsy of brain | 104 | " | 2 | " |
| 11th. | Scarlatina | 100 | " | 2 | " |
| 12th. | Diarrhœa | 92 | " | 2 | " |
| 13th. | Croup | 89 | " | 2 | " |
| 14th. | Inflammation of stomach and bowels | 75 | " | 2 | " |
| 15th. | Unknown | 68 | " | 2 | " |
| 16th. | Dysentery | 60 | " | 2 | " |
| 17th. | Bronchitis | 59 | " | 2 | " |
| 18th. | Congestion of lungs | 58 | " | 2 | " All but 10 under 1 year. |
| 19th. | Cyanosis | 57 | " | 2 | " " 3 " 1 " Only 2 more died over 2. |
| 20th. | Phthisis | 56 | " | 2 | " 40 of them under 1 y'r. |
| 21st. | Pertussis | 51 | " | 2 | " |
| 22d. | Diphtheria | 49 | " | 2 | " and in the following 3 years 43 more. |

The diseases which more especially caused the excess of *male* mortality among children were—

| | Boys. | Girls. |
|---|---|---|
| Inflammation of brain | 194 | 153 |
| Convulsions | 309 | 244 |
| Marasmus | 291 | 230 |
| Cholera infantum | 450 | 412 |

In phthisis pulmonalis and scarlatina the proportion was reversed. In hooping-cough the numbers were about equal.

At a stated meeting of the College, held November 6, 1867, the death of Dr. Theophilus E. Beesley having been announced, the following resolutions were passed :—

*Resolved*, That the Secretary be instructed to convey to the family of the late Dr. T. E. Beesley an expression of the deep regret of the College at his loss, and of their sincere sympathy and condolence with his family in their bereavement.

*Resolved*, That Dr. S. Littell be requested to prepare a biographical notice of Dr. Beesley, to be read before the College.

# MEMOIR

OF

# THEOPHILUS ELMER BEESLEY, M.D.

READ BY DR. LITTELL BEFORE THE COLLEGE OF PHYSICIANS, DECEMBER 4, 1867.

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WITHIN a very brief period two of our most venerable and respected associates,[1] differing as widely in their mental and moral attributes as in their physical conformation, and in both distinguished above many others, have been hastily summoned to the Spirit-Land; admonishing us of the uncertainty of life, startling us by the suddenness of their exit, and proclaiming at once with impressive solemnity,

> "How peaceful and how powerful is the grave
> Which hushes all!"

It seems but yesterday, Mr. President, that the death and virtues of our late friend and colleague, Dr. WILLIAM DARRACH, were made the subjects of fraternal regret and generous eulogy in this hall; and we listened with feeling and chastened hearts to the able portraiture of his character, drawn by the hand of one of those to whom I have just alluded, and whose own departure we are now in turn assembled to commemorate.

Dr. THEOPHILUS ELMER BEESLEY, with some account of whose life I have been charged by the College, was born in the village of Port Elizabeth, near Maurice River, Cumberland County, New Jersey, on the 5th of December, 1796. His ancestry was respectable for worth, and early settlement; having emigrated to this country at a remote period in its history. The family name is perpetuated by a well-known part of the State;—Beesley's Point, on the Atlantic coast, thence deriving its appellation.

His grandfather, Jonathan Beesley, warmly espoused the cause of the Colonies in the war of Independence; and was killed while reconnoitring the British army during its retreat through the Jerseys, after the evacuation of Philadelphia. He resided on his farm on Maurice River, near what is now called Bricksborough; and deserves honourable mention and grateful remembrance, for his gallant conduct and patriotic devotion. His wife, who thus early became a widow, was of Swedish extraction, and bore before her marriage, the name of Peterson; she was a very worthy person, and lived to an advanced age. His son Maurice, who appears to have derived his name from that of the river, succeeded his father on the farm, and added to his agricultural pursuits the business of a surveyor. He was a man of worth and ability, and was much respected by all who knew him. He died when his son, Theophilus, was only four years old,

[1] Drs. Beesley and Jewell.

and left his wife, whose maiden name was Boadly, a widow at the early age of twenty years.

She continued to reside on the homestead until 1805, when she contracted a second marriage with John Tuft, of Salem in the adjoining county, who had sustained a similar bereavement; and the new connection, contrary to what too frequently happens, was not without ultimate advantage to her son. Dr. John Tuft, now of Richmond, Virginia, is his half brother. After some preliminary instruction in the neighbourhood, he was sent, in his fifteenth year, to a boarding school at Haddonfield, then under the direction of Munson Day, a member of the Society of Friends, and a teacher of considerable repute in his time. Nothing very remarkable is recorded of him during his brief residence there. A contemporary speaks of him as having been a quiet and resolute boy, whom he does not remember to have been chargeable with any fault either against the teacher or the pupils. He appears to have been steady and industrious, to have made good progress in his studies, and to have taken his full share in all youthful sports and exercises. He was especially fond of shooting and fishing; and though he afterwards renounced the one as being cruel, and therefore unjustifiable when pursued for mere personal gratification, continued quite into an advanced period of life, like a true disciple of Isaac Walton, to find occasional recreation in the other: having, in common with all mankind,[1] no tender misgivings while extinguishing in "unbreathable sword-sharp air" the

> "Cold, sweet, silver life, wrapped in round waves
> And quickening with touches of transporting fear."

In the works of nature, so attractive to the youthful mind, and such a perennial source of pleasure, occupation, and instruction to every age, he took early and unfailing delight. He seems to have devoted himself with particular interest to the study of botany and mineralogy; rarely indeed, even in his maturer years, making a visit to the country without bringing home some specimens in these his favourite sciences, and often projecting excursions with that express object. He was also an adept in the use of his pencil; drawing admirable likenesses, and sketching with great cleverness all natural objects. These pure and simple pleasures never lost their power to please; and he might have been seen, down to the very close of his life, cultivating his flowers, and bending over his aquarium.

Returning to Salem, he completed his education at such schools as the town afforded; and having determined upon medicine as a profession, began its study in 1815, under the direction of Dr. James Vanmeter, of that place. Visiting Philadelphia soon afterwards to attend the lectures at the University of Pennsylvania, he was so strongly impressed by the superior facilities which it afforded for the acquisition of medical science that he resolved to transfer his residence there; and entered as a student the office of Dr. James Rush, who still survives his pupil. It was situated in Fourth Street below Walnut, and had been the abode of his father, Dr. Benjamin Rush, who died a short time before his arrival. He graduated Medicinæ Doctor in the year 1819; presenting as his thesis for

[1] Dr. Wolcott would *seem* to have been an exception;—

> "Enjoy thy stream then, harmless fish;
> And should an angler for his dish
> Through gluttony's vile sin,
> Attempt, the wretch, to draw thee out,
> Heaven give thee strength, O gentle trout,
> To pull the rascal in!"

the doctorate a paper on the subject of emetics. Still further to qualify himself for the competent discharge of the arduous and responsible duties which he had assumed, he became an Interne of the Philadelphia Alms-House Hospital, then located in Spruce Street above Tenth; and spent a year in that Institution, greatly to the increase of his practical knowledge. During a severe epidemic of typhus fever which prevailed about that time and crowded the wards of the hospital, he was honourably distinguished for his laborious exertions and for his devotion to the sick. One of his companions there was the late Dr. William Darrach, and the friendship then begun, was interrupted only by his death.

Having thus availed himself of every means of improvement within his reach, he established himself in his adopted town, and at once addressed himself to practice. He had for his chief contemporary,—competitor he could not be called where there was no rivalry—the late Dr. Edward Q. Keasbey, a most worthy man and excellent physician, between whom and Dr. Beesley a very friendly intercourse always existed; the one officiating as groomsman at the marriage of the other.

Long before this time, however, while yet in his seventeenth year, his mind had been directed to the subject of Religion as the first great business demanding his attention. He had been brought up under Methodist influences, that being the early faith of his mother; but association and reflection had led to a change in his views, and when about nineteen years old he became a "convinced Friend," as proselytes are termed by the Society in which he found a quiet haven during the remainder of his life.

As business increased and his pecuniary affairs became more comfortable, he naturally turned his thoughts towards matrimony, and added to his claims upon the patronage of his Sect, by marrying, on the 22d of November, 1820, Hannah Wistar, a daughter of John, and a niece of the celebrated anatomist Dr. Caspar, Wistar; a very amiable and intelligent person of that denomination; with whom he lived in love and gentle companionship until her decease in 1864—a period of forty-four years. Two children only, a son and a daughter, survive their parents. The latter married Dr. William D. Stroud, and with her Dr. Beesley lived after his own home had become desolate.

The laborious nature of his practice, much of which was beyond the borders of the town, eventually impaired his health by causing severe attacks of dyspepsia; and induced him, about the year 1830, to remove to Philadelphia. He brought with him, as he told one of his friends, the sum of $4000, the savings of several years of professional toil; and expended the whole amount before he could be said to have fairly begun to gather the harvest of his new field;—notwithstanding that here, as in New Jersey, the Friends are a numerous people, and everywhere strongly biased by the ties of sectarian brotherhood.

From that time onward all his difficulties vanished, and his success was assured. He arrived at a propitious period, when several of the older practitioners were either passing, or had passed, away; and was preceded by a high reputation for character, skill, and experience. His practice consequently became both lucrative and extensive; including many wealthy and influential families, and among them that of his old preceptor, Dr. Rush. What he thus acquired through influence, opportunity, and merit, he retained by kindness, sympathy, and attention. He was the friend and counsellor, as well as the physician of his patients, and they instinct-

ively turned to him in sickness and bereavement, as well for consolation and encouragement, as for relief from physical suffering.

Dr. Beesley was too earnestly intent upon the practice of his profession; too modest, retiring, and unassuming; and too much engrossed by his private, domestic, and religious duties, to permit any very frequent association with his medical brethren, either in their social, or official reunions. He shrank from office, so eagerly coveted by others, because he had no inclination for notoriety, prominence, or distinction. He did, it is true, accept the Vice-Presidency of the County Medical Society, but he knew that its duties were contingent and improbable; while he declined the proffered Presidency, for the reason that it necessarily made the incumbent noted and conspicuous. He held the office of Censor for several years, and is said to have rendered efficient service by his faithful discharge of its unenviable duties. In 1832 he was elected a Fellow of the College of Physicians, and was formerly not infrequent in his attendance at its meetings; occasionally taking part in the debates. The reasons just assigned, with the additional one that he was unwilling to obtrude himself upon the notice of his professional brethren unless he had something to communicate which would add to the stock of medical knowledge, deterred him also from appearing before them, except upon rare occasions, in print. Of the fame of authorship, indeed, he seems to have been wholly unambitious. One of his occasional papers was written in refutation of the mercurial origin of ulcerative stomatitis; but with this exception, and perhaps one or two others, the contributions made by him to the literature of the Profession consist chiefly of reports of cases which he regarded as interesting in themselves, or as inculcating some useful lesson. Among the earliest of these is an account of a scirrhous tumour of the cœcum, which had been mistaken by some inexperienced practitioner for an aneurism of the right iliac artery.[1] That this reserve was owing to no inability to express his thoughts with fluency and correctness, the publications referred to, with the interesting tribute to the memory of his early friend, abundantly prove.

> "Strongest minds
> Are often those of whom the world
> Hears least;"

they are the gaseous products, the smoke, the vapour, and the steam, that make the most noise in their escape. True merit is rarely obtrusive; and the most profound thinkers are not always the readiest to give public expression to their thoughts. In his instance there is reason to regret that he did not write more. He was remarkable for good sense, soundness of judgment, and shrewdness of observation; he had grown old in a Profession in which he had attained deserved celebrity; and the results of his long experience, which could hardly have failed to be extremely valuable on many controverted points, being thus hived in his own bosom, have been lost to mankind. Happy would it be if the superior skill and real knowledge of each individual could be bequeathed to those who come after; instead of being, like the good which he does, too often interred with his bones, and thus failing to contribute their proper quota towards the increase of the general store.

Though living so little in the eye of the public, Dr. Beesley was, notwithstanding, universally recognized as one of the principal physicians of

[1] The person is still living, upon whom when a child, he performed the operation of tracheotomy for the removal of a bean.

the city; and it may not be time misemployed to advert, for a moment, to the causes which conduced to such eminence. His mental constitution was perhaps neither original nor brilliant; its leading characteristic was solidity, and though endowed with a good deal of apprehensive power, the movements of his mind were rather circumspect and slow, than precipitate and intuitive; but his judgment was dispassionate, and its conclusions generally right. His former residence in the country, where he was compelled to depend, in a great measure, upon his own resources, had formed in him habits of close observation and self-reliance; and hence in difficult and doubtful cases his counsel was sought and valued by his brethren. To say that he was fair and honourable in all his professional intercourse; that he was free from egotism, pride, vanity, self-conceit, and ostentation; that when called in consultation he never assumed undue superiority, nor ever sought to make invidious impressions on the minds of patient or friends; that, mindful of the golden rule of doing to others as he would have them do to him, he was scrupulously observant of the ethical proprieties which should regulate medical conduct; while it accounts for the high estimation in which he was held, can hardly be regarded as complimentary to such a man, for he would have considered any other course inconsistent with the very first principles of morality. As an elder in the congregation, and clothed, as such, with a semi-clerical character, he ministered, as occasion required, to the minds, as well as to the bodies, of the sick, especially those of his own household of faith; and this being done with his usual friendliness and discrimination, his words of hope and comfort often found willing and grateful reception.

A proneness to infidelity has been supposed to be more common among medical men than others. Chaucer sarcastically says of one, that "his study was but little in the Bible;" and Sir Thomas Browne alludes to it, as "the general scandal of the Profession." If such imputation have any foundation at all, which may well be doubted, it has probably arisen from the fact that, conversant as they are with the wonderful works of God, which should produce a result directly opposite, their unbelief is therefore the more remarkable. Like many of the learned in every department of knowledge, eminent men among them also, have erred, from not, perhaps, sufficiently considering that

> "humble love,
> And not proud reason, keeps the door of heaven;"

but instances proving that there is no necessary incompatibility between a highly religious frame of mind and the greatest attainments in medical science, will spontaneously occur to every one; and Dr. Beesley himself,—"a labourer with moral virtue girt"—a devoted son, brother, husband, father, and friend, might also be adduced as a bright and instructive example.

He was of low stature and rather robust frame; of simple tastes, domestic habits, and winning deportment. His countenance, in repose, was grave and thoughtful; but when in conversation, or lighted up by any transient emotion, was singularly pleasing and attractive. He was easy of access, affable, and courteous in his intercourse with his fellow men; and though undemonstrative in his feelings, was in disposition sincere, frank, generous, and obliging. He appeared to have an ever-present sense of the responsibilities of life, and was always self-governed and sedate; neither suffering himself to be elated by prosperous, nor depressed by adverse fortune. Though strict, and even perhaps somewhat

rigid in his self-discipline and denial, he was neither austere nor morose; but was cheerful in his sobriety, and ever ready to contribute his full share to the sum of human happiness. It has been said that "the man is yet unborn who duly weighs an hour;" but it is very possible to have a just, if not a full, appreciation of the value of time; and Dr. Beesley, while he diligently employed his own, and would have condemned its waste in vain and frivolous amusements by others, was a liberal advocate of such rational recreations as tended to inform the mind, purify the heart, and invigorate the body. He was himself a lover of books of general literature, and was, moreover, well informed on most of the great questions of the day. His heart was full of the kindliest sympathies of our nature, and he was not only prompt in his response to every professional call, however humble the circumstances of the applicant—rather the more prompt because of their humbleness,—but was ever disposed to contribute liberally of time, money, and personal exertion, to relieve individual distress, or to promote the success of any good object. He continued in the active exercise of his Profession until within a few months of his death, not so much from any pecuniary considerations, as for the opportunity which it afforded of gratuitous prescription among a number of reduced families, whom he had known in more prosperous circumstances. His charity was not of that idle kind which contents itself with good wishes merely; bidding the needy to be warm and filled, and yet withholding the means necessary thereunto; but his ready purse was ever open to second the benevolent impulses of his heart, and it was remarked that his contributions bore a greater proportion to his means than those of most others of the Meeting of which he was a member.[1] A touching instance of his earnestness and self-devotion was afforded by his undertaking, a few months before his decease, and at an age and under disabilities which would have justified most men in claiming the ease and comfort of home, a journey through a portion of the Southern States, in order to distribute articles for the relief of the temporal and spiritual wants of the poor inhabitants, white and coloured, of those regions. Finding at Friendsville, Tennessee, an empty and unappropriated building, he pledged himself to supply it, on his return, with all the furniture and appliances of a school; and had the pleasure of hearing, before his death, that it was already thronged with scholars.

It was not probable that one of such rare moral endowments would be permitted by the Friends to remain long in obscurity among them. Unaffected piety, profound humility, and ardent zeal, tempered by moderation, and guided by a wisdom drawn from the inspired Word, very soon asserted their due influence; and with increasing respect and confidence, he rose also in prominence and authority until he became one of the "Overseers" of the congregation. His Christianity was no mere intellectual assent to the teaching of Divine truth. It touched his heart and regulated his conduct, supported him in sorrow and bereavement, and was his comfort in life and his hope in death. He was a Christian in the true sense of the word—meek, lowly, reverent, and devout, submitting himself in unmurmuring resignation to the will of his Heavenly Father, and

[1] In illustration of the light in which he was regarded by those who knew him best, as also of his own disinterestedness and magnanimity, it may be mentioned that when his half brother, the late Sinnickson Tuft, who died some years after attaining his majority, would have bequeathed his property in equal share to him with the other children, Dr. Beesley generously declined to be thus included.

thence in his severest afflictions, deriving strength to impart to others, with the tenderest concern, the consolation which, as the person principally interested, he most needed himself. It was wonderful to witness his faith and composure under such trying circumstances. He suffered no earthly sorrow, the loss either of children, or of wife, to disturb his equanimity, or to impair his trust. And this from no indifference, or obtuseness of feeling,—on the contrary, his temperament was naturally warm and affectionate—but from an assured belief that all things, however apparently adverse, being ordered by infinite Power and Love, must be promotive of individual and general good.

When we consider the diversities of human nature, it may, perhaps, be deemed by some too much to say with the author of the Night Thoughts that, it is "impious in a good man to be sad;" but there can be no doubt that if, like our friend, people would strive to grow old gracefully, allow the attrition of time to smooth the asperities of disposition, and permit their religion to have its due influence over them, they would not only be more happy in themselves, but appear also far more amiable to others.

A very pleasing trait in Dr. Beesley's character, merely alluded to above, was a reverence for sacred things; which is not inaptly said by Carlyle, to be the highest feeling that human nature is capable of,—the crown, indeed, of our whole moral manhood. He had accustomed himself from childhood to think and to speak with a profound awe of the Divine Majesty; the Sacred Name was never lightly uttered or written; and the last effort of his pen affords incidental evidence that the habit of his youth had grown and strengthened with his age.

Christianity, teaching that God has made of one blood "all nations of men for to dwell upon the face of all the earth," recognizes and asserts the common brotherhood of man, thus "making the meanest member of our race sacred with reflected glory;" and though it directly interferes with no political institutions, insensibly tends by its meliorating and transforming influence upon individual hearts, to abate, and ultimately to remove, every human wrong. Slavery, which abolishes all self-control, and consequently, all proper personal responsibility, is manifestly alien from its spirit; and there is nothing more honourable to the Society of Friends than its steady and consistent opposition to a system fraught with so much and so great evil. In the opinions entertained by his brethren, Dr. Beesley, as may well be presumed, heartily concurred; and whenever he thought it right to deliver his testimony against it, they lost nothing by his temperate but decided advocacy. He regarded it as a gigantic wrong, injurious alike to master and to slave; and found some compensation for the horrors of war, which he could not deem a lawful means for the redress of any evil, in the beneficent result to which it led,—the enfranchisment of a whole people.

Allusion is made above, to the "Colportage Mission" to East Tennessee and Western North Carolina, which he entered upon in May and June of the present year. He took with him on that occasion, four large and well-filled trunks, containing Bibles, religious books, and tracts; *two gross of good spectacles, two thousand needles assorted in small packets, some dozens of thimbles*, a quantity of dry-goods, etc. etc. The spectacles, provided with such thoughtful forecast, were everywhere regarded by the recipients as a great boon, enabling them to read the books which, but for their aid, would have been in many cases comparatively useless.

He was kindly received by rich and poor of every colour and denomi-

nation; meetings were held; several influential individuals offered their aid in furtherance of his mission; and its objects having been satisfactorily accomplished, he returned in safety to his family, after an absence of more than six weeks, without having been delayed one hour by sickness,[1] and with a heart overflowing with gratitude and love.

"Many hearts," he says in a brief preface to a report made to the benevolent contributors, written in a style of great modesty, quaintness, and simplicity, giving an account of his mission, and yet conveying a very inadequate idea of the good actually done—for, as is known by letters since received, several families were rescued from a state of starvation through his timely interposition,—"many hearts, saddened by want and sorrow, were cheered and, we trust, encouraged to look to that gracious SAVIOUR in whose name and love they were distributed. May we not humbly hope that, through the help of the HOLY SPIRIT, a blessing will follow the precious seed thus scattered, as it were, over a wide area, and fruit to the glory of GOD and the spread of the REDEEMER'S kingdom appear in a future day: may the LORD in His infinite love and compassion send forth many labourers to gather the wheat into His heavenly garner."

The report indirectly sets forth, in strong relief, the guileless character of our friend, his deep humility, childlike faith, and untiring benevolence; and is not altogether without value also as a contribution to the history of the times in which we live.

Among Dr. Beesley's papers is a private diary, in which he has recorded his personal feelings and meditations; and reference is here made to it only as a means of self-culture and knowledge which he employed.

He returned in good health from his tour abroad, but a severe attack of colic, produced by a fit of indigestion while on a visit to his friends in Salem, had caused his children to be summoned to his bedside, under the impression that he might not survive it. But the urgency of the danger soon abated so far as to admit of his removal to his home, where he still continued to be troubled with oppression, flatulence, and other symptoms which were attributed to gastric derangement. The end, however, was now approaching. He had passed the allotted period of three-score years and ten; his recent illness had rudely shaken a constitution already somewhat impaired by infirmities incident to advancing age, and he was mercifully called to his reward while still in apparently vigorous decline, and before his remaining strength had degenerated into labour and sorrow. He instinctively felt that the time was short, and hence probably arose the impulse to work while it was yet day. When filial love and solicitude would have diverted him from his laborious and self-denying pilgrimage to the South, by suggesting the possible consequences to his person, he silenced entreaty, if he did not remove apprehension, by replying that he would be as near to heaven there, as in his own house. He was not to be moved by such considerations; neither would he have counted his life dear unto him, so that he might finish his course with joy, and humbly crown it by a signal act of love and charity. He had evidently been long ripening for the change which, in the nature of things, could not now be very remote; and though it came at last somewhat unexpectedly, the consciousness that it was immediately at hand,

[1] This will appear remarkable, when it is stated that he was then, and had long been troubled with a complaint—Paresis Vesicæ—which required, thrice daily, instrumental aid.

would have caused him no alarm. His work on earth was done, he had made all his preparations, was ready to enter upon his heavenly inheritance, and could cheerfully say, in the language of the patriarch, "Lord, now lettest Thou Thy servant depart in peace!"

His death, which happened on the 17th of October, was in perfect harmony with his life. It occurred in the bosom of his family, and without any considerable pain, or suffering. Like Enoch, he was not, for God took him. Only one hour before, he had been dictating to his daughter the directions for some boxes of supplies which he was about to send to the school at Friendsville. Having finished his instructions he laid himself down upon his pillow, from which he partially raised once or twice to seek relief from a sense of oppression. This having been apparently obtained, he again resumed his position; and a few minutes afterwards his gentle spirit passed from earth with scarcely any previous intimation, and so peacefully that he seemed to have actually departed in slumber; illustrating thus the beautiful expression of the Psalmist, "For so He giveth His beloved sleep." For him, with his loins girded about, his light burning, and he himself like unto those who wait for their Lord, we could hardly wish, sudden as it was, that it had been otherwise; but the world itself loses something by such an abrupt termination of a good man's life, in that it is deprived thereby of those lessons of "sweet peace, and heavenly hope, and humble joy," emanating from his dying chamber, which a more prolonged conflict with the last enemy would have afforded.

Mr. President, I have performed, to the best of my ability in the brief space allowed, and with the scanty professional materials at my command, the duty devolved upon me by the College. It has been at once a pleasing and a mournful task, and I would fain hope that I have not contemplated, unimproved, the character so imperfectly delineated. The narrative is the plain and unexaggerated description of an individual who exhibited in his life a combination of moral excellencies which would have done no discredit to the most catholic culture; and however greatly we may deprecate the divisions which, unhappily, afflict Christendom, there is surely cause for thankfulness that what is retained in common by nearly all denominations, is capable, when operating upon good ground, of fostering virtues such as marked the path of our beloved friend and associate, whose name disappears from our Transactions with this last humble and affectionate tribute to his memory:—

> "Perchance a frail memorial, but sincere,
> Not scorned in heaven, though little noticed here."

Some stanzas from Whittier's beautiful monody on Thomas Shipley, have been elsewhere published as not inapplicable also to Dr. Beesley; and though perhaps, like much that has gone before, hardly within the strict province of official record, will form a fitting conclusion to the present memoir:—

> Gone to thy Heavenly Father's rest!
> The flowers of Eden round thee blowing,
> And on thine ear the murmurs blest
> Of Shiloh's waters softly flowing!
> Beneath that Tree of Life which gives
> To all the earth its healing leaves;
> In the white robes of angels clad,
> And wandering by that sacred river,
> Whose streams of holiness make glad
> The city of our God for ever!

Gentlest of spirits! not for thee
Our tears are shed, our sighs are given:
Why mourn to know thou art a free
Partaker of the joys of Heaven?
Finished thy work, and kept thy faith
In Christian firmness unto death:
And beautiful as sky and earth
When Autumn's sun is downward going,
The blessed memory of thy worth
Around thy place of slumber glowing!

* * * * *

Oh for the death the righteous die!
An end, like Autumn's day declining,
On human hearts, as on the sky,
With holier, tenderer beauty shining;
As to the parting soul were given
The radiance of an opening Heaven!
As if that pure and blessed light,
From off th' Eternal Altar flowing,
Were bathing, in its upward flight,
The spirit to its worship going!

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At a stated meeting of the College, held May 1, 1867, the death of Dr. C. W. Pennock, an Associate Fellow, having been announced, Drs. Bell, Carson, and Gerhard were appointed a committee to prepare resolutions expressive of regret at the death of Dr. Pennock, and to communicate the same to the family of the deceased.

On motion, Dr. Gerhard was appointed to prepare an obituary notice of Dr. Pennock, to be read before the College.

# SKETCH

OF THE

# LIFE AND PROFESSIONAL LABOURS OF DR. C. W. PENNOCK.

BY WILLIAM W. GERHARD, M. D.

READ, APRIL 1, 1868.

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Dr. C. W. Pennock died on the 16th of April, 1867, after a long illness. He was born at Philadelphia, in the year 1801. Early in life he took an interest in medicine, and attended some courses of Dr. Godman on Anatomy, and Mr. Keating on Chemistry, but did not commence the study of medicine with a serious intention of graduation until the year 1825, finishing his profession in 1828. From the first he was known as a most careful observer, and graduated after writing an excellent thesis on the Absorption of Poisoned Wounds.

In the autumn of 1828 he entered the Alms-house Hospital at the same time with myself, and passed there a year in the careful study of disease. In the spring of 1830 he sailed for Europe, and passed between two and three years there as a thorough student, devoting his time more especially to the study of diseases of the heart and of the skin. Soon after his return he married an estimable lady, Miss Caroline Morris, and commenced the practice of medicine, spending a couple of years as one of the attending physicians of the Philadelphia Dispensary. In 1835 he became one of the attending physicians at the Philadelphia Hospital, Blockley, a most excellent field for the study of his favourite class of diseases—the various cardiac disorders. In that institution I became his colleague as one of the attending physicians, and we were enabled to study the symptoms and pathological anatomy of typhus fever, a serious form of disease which had long prevailed in England and Ireland, and had there been confounded with typhoid fever.

He continued in this position for some years, finding time, when he was not on duty at the hospital, to enter upon a valuable course of investigations as to the play of the heart in animals. These researches were carried on at Frankford, particularly on sheep, which he obtained at a butcher's slaughter-house with no little pains and expense. So completely was he attached to this branch of his profession that he obtained a large and handsome drawing derived from his own dissections, which illustrated very clearly the action of the heart, and made out the influence of the valvular sounds, and the mode of production of the systolic action.

An excellent treatise of Bouillaud on the diseases of the heart, with copious notes by Dr. Pennock, was published in the year 1837. After being attached to the Philadelphia Hospital some years, he finally resigned at the time when his health began to fail. The senior members

of the College are so familiar with the elevated character of Dr. Pennock, and his high scientific attainments, that it is scarcely necessary to speak to them in reference to him. But for more than twenty years he had become a patient sufferer, labouring under a most fearful form of paralysis, attacking exclusively the spinal marrow extending upwards throughout its whole course, until finally the paralysis reached the nerves connected with the muscles of the neck.

The loss of locomotion was almost perfect, the slight power of moving a finger or two only remaining. The loss of sensibility was nearly complete. This paralysis of course produced affections of the bladder and bowels, and gave rise to serious ulcerations at the lower part of the spine.

These afflictions he bore with wonderful patience, retaining his cheerfulness, and interest in all professional matters to the last—even leaving directions for the examination of his brain and spinal marrow after death.

I have thus attempted to give a slight sketch of Dr. Pennock's professional labours; great as these were they did not form his most distinguished merits, his moral excellencies were still more remarkable: he was always kind and interested in his patients, sometimes almost to a fault. From his early life he fortunately was placed in a position of easy independence which enabled him to give free scope to those feelings of generous kindness which seemed part of his very nature, and sometimes led the unprincipled to take undue advantage of his kind generosity. While a student he was constantly ready to assist his fellows who, from want of remittances, were unable to reach their homes; some of those advances were repaid, others again, I am sorry to say, were forgotten. Large sums were expended in his experiments, and in the purchase of medicine and food, which he distributed to the poor, so that I am certain his professional expenses were never equalled in his most prosperous times by his receipts. This interest in his patients was so intense that he often suffered from it, and sometimes was almost rendered ill from the mental anxiety caused by severe cases of disease which he was called upon to treat.

The warmth of his feelings of friendship and kindness must be well known to many Fellows of the College, certainly to no one more than myself. It is now more than thirty years since, when I had commenced the practice of medicine in this city, I became severely ill with typhoid fever. I was alone in my office in this city. Dr. Pennock insisted upon my removing to his own house, and thus watched me with the most affectionate kindness until my recovery some weeks afterwards. Many other acts of devoted kindness to others, even when the strong tie of personal friendship did not exist, occurred during the course of his life. To those of the older Fellows of the College, who were familiar with the benevolent countenance of Dr. Pennock and his untiring zeal in the prosecution of his profession, which he cultivated from the purest feelings of love, and not with the desire of pecuniary profit, this little notice of the excellent traits of his character both as to his devotion to science and his high standard of moral excellence, may serve to recall him to our recollection.

# MEMOIR

OF

# FRANCIS WEST, M. D.

READ BY DR. LITTELL BEFORE THE COLLEGE OF PHYSICIANS, DECEMBER 2, 1868.

"Quis desiderio sit pudor, aut modus
Tam cari capitis?"

Dr. Francis West, the fourth and youngest son of Francis and Mary West, was born on the fifth of March, 1810, in the old family mansion on Front Street, below Walnut, where his ancestors had long resided, and which at the time of its erection in 1768—one hundred years ago—was not far from the centre of the fashion and wealth of the city. His grandfather, William West, was a prominent merchant of Philadelphia, at a time when the word bore a different meaning from that which it has at present; and his son, with several other citizens distinguished for their opulence and patriotism, received their commercial education under his direction. Young Francis, after some preliminary instruction, was sent at the early age of eight years, to the School of James Ross, a celebrated classical teacher, and the author of a Latin Grammar, which was of high authority, and extensively used at that time. Under his careful tuition he made rapid advancement in his studies, and imbibed a taste for classical literature which he retained through life. In 1824, when he was only fourteen years old, he entered, as a member of the Sophomore Class, the Department of Arts in the University of Pennsylvania.

The error of pressing upon the undeveloped mind, studies which require the mature reasoning powers of riper years, is still too frequently committed, and is the more mischievous when there coexists the physical debility attendant upon rapidity of corporeal growth. Memory and imagination are the faculties which are in greatest vigor and activity in early life; and hence it is that remarkable proficiency is often made in the acquisition of language, when there is no corresponding progress in the more recondite branches of abstract philosophy. It is certainly unreasonable to expect rare attainments in every department from a youth of tender frame and immature faculties thus tasked beyond their strength; and many a boy of fair promise has fallen into an untimely grave, or has had his health irretrievably ruined by the severe exertion necessary to keep pace with others who were not only older, but of more compact and vigorous frame. The tall and slender lad asserted, and easily maintained, his superiority in Latin and Greek, but, as might have been anticipated, was not equally conspicuous for his attainments in mathematics and the abstruser branches of knowledge. If in these, however, he fell, from the

necessity of things, somewhat behind others, he was among the foremost in classical learning, and might have boasted with GOLDSMITH, that "he could turn an Ode of Horace into English with any of them." It happened moreover, fortunately for him, that the Trustees having determined to raise the degree of qualification, required the Senior Class, then far advanced in its course, to pass at its examination the ordeal of their more elevated standard. Of sixteen persons of whom it was composed, eight —including Mr. West and several others who afterwards filled respectable positions in society, and even in the direction of their Alma Mater—failed to respond satisfactorily to the demand so unexpectedly, if not inconsiderately, made upon them; and his parents, ambitious for his advancement, and naturally thinking that he had been hardly treated, transferred him to Dickinson College, Carlisle; where he graduated with distinction in the following year, as he would, no doubt, have done had he remained at the University. He began the same year the study of medicine; entering as a private pupil the office of Dr. PARRISH, and matriculating in the Medical department of the University of Pennsylvania.

The evil consequences of the intellectual pressure to which he had been subjected, without due physical invigoration, now soon became apparent. His strength gave way under a protracted, and well-nigh fatal attack of typhoid fever; which was followed by an almost total loss of memory, and such general prostration of mind and body, as obliged him to suspend his studies, and travel for a year or more, before his health was finally re-established.

An interesting incident of his novitiate, was his selection by his Preceptor to assist him in his attendance on the late JOHN RANDOLPH during his last illness, which took place in this city. The choice was the more acceptable to that eccentric and somewhat intractable individual, by reason of his previous acquaintance with his brother, Captain JAMES WEST, the celebrated navigator,[1] with whom Mr. RANDOLPH had sailed on several occasions in his voyages to and from Europe. It was, with admirable forecast, deemed important to have an intelligent, reliable, and *impartial* witness,—one consequently, not of the same household of faith as Dr. PARRISH,—of the conversation and testamentary dispositions of Mr. RANDOLPH; and for this purpose, as well as to secure the due fulfilment of professional prescription, no fitter person could have been chosen. Some legal proceedings in connection with this matter being afterwards instituted, he was summoned to Virginia, and closely examined, with the intention of drawing from him a positive expression of his belief in the insanity of Mr. RANDOLPH, in order that they might, on that plea, set aside the will by which he enfranchised his slaves; but this attempt, though artfully made, he adroitly foiled, by declaring that he would not presume to throw on the constituents of Mr. Randolph, who had so frequently chosen him as their representative, so serious an imputation as the affirmation would imply.

In the year 1832, he received the degree of Doctor of Medicine; submitting therefor a Thesis on the subject of Hepatitis. He thus entered upon the practice of his profession about the time of the first appearance of the cholera in this city, during the prevalence of which, disregarding

[1] Captain WEST has crossed and recrossed the Atlantic more than two hundred and fifty times, without accident, and—such was his exceeding watchfulness and care—without undressing for rest while at sea; in order that he might be ready on the instant to follow any call upon deck.

all considerations of personal safety, he devoted himself unreservedly to attendance upon the sick in every locality; and rendered besides, especial service as physician to one of the hospitals established under the general direction of his Preceptor. He was not less active in the second visitation of that formidable epidemic in 1849; addressing himself to his self-denying and perilous duties with all the advantage derived from former experience, and refusing no summons by night or by day.

The Central Dispensary furnished at that time, as it still does, an excellent opportunity for acquiring practical medical knowledge, and Dr. West employed very advantageously a part of several of his earlier years in the service of that beneficent Charity; having in succession the professional charge of every district in the city. The amount of physical labor alone, which such attendance required, in places often far distant from his office, can scarcely be imagined by those who are familiar only with the facilities of modern communication.

In 1836 he was elected physician to the Retreat known as CHRIST CHURCH HOSPITAL, an asylum of the CHURCH for the abode of poor gentlewomen belonging to her communion; and this office, in which he succeeded Dr. JOHN RHEA BARTON, he continued to hold until his death; discharging its duties with scrupulous fidelity and universal satisfaction. At the time of his appointment it was located in Cherry Street below Fourth, and it was, therefore, not very inconvenient to call in his daily rounds; it was subsequently removed to Belmont Avenue, beyond the Schuylkill River; and notwithstanding the increased labor, and the loss of time on his part thereby involved, he never omitted to make his weekly official visit, and to give also such further attendance as the condition of the residents required. The value of the services of a judicious, kind, courteous, and sympathizing physician to an Institution, the inmates of which are educated persons who have once known more prosperous fortune, does not admit of appreciation, and Dr. West possessed qualifications which pre-eminently adapted him for the situation. The writer who, before its removal, sometimes supplied his place during his occasional absence from the city, can bear the strongest testimony to the consummate manner in which he performed his duties there; relieving suffering, where he could not cure disease; administering at suitable times words of friendly counsel and encouragement; and winning all hearts by the patience, gentleness, and consideration with which he listened to the complaints and soothed the infirmities and sorrows attendant upon penury, loneliness, and age.

The ORPHAN ASYLUM is another charitable foundation to which he gave many years of faithful and congenial service. He had a peculiar aptitude for the management of children; and with their intuitive perception they gave him at once their confidence and love. The influence which he thus obtained, he often turned to good account by an apt quotation, or a timely admonition. Entering a drug-store on a Christmas morning, and seeing the son of the proprietor playing with his toys, he wrote on a sheet of paper the well-known couplet from POPE in praise of honesty, and signing the author's name on one side, and his own initials on the other, gave it to the lad as *his* Christmas offering; bidding him carefully to remember the lesson which it taught. The father perceiving the impression it made upon the child, had the paper framed and hung up in his chamber; and on hearing of the sickness of the Doctor, said that, in the event of his death, he should value it more than he had ever done.

To this period belongs a passing allusion to another severe illness of Dr. West, from the absorption of poisonous matter through a wound received while making an autopsy. Dr. Ashmead, who was attending him in conjunction with Dr. Parrish, calling in usual course one afternoon, found, to his surprise, the house closed, and the family gathered around his bed under the apprehension that he was dying; in which belief the patient also participating, had refused to take any longer the stimulants which had been prescribed. Having visited him in the morning when his condition, though dangerous, had not been regarded as desperate, the Doctor, confident that the apparent exhaustion was merely owing to the want of due support, strongly urged a recurrence to the treatment which the consultation had directed; offering to drink with him by way of inducement. The advice, so timely given, was happily followed; its good effects were soon perceptible, and from that moment his amendment was steady and progressive.

In 1839 he was elected a Fellow of the College of Physicians; and though rarely contributing papers, or participating in debate, was generally constant in his attendance at its meetings, and rendered valuable service as a member of the Library and other Committees.

He was a member of the County Medical Society, and was repeatedly sent by that body a delegate to the State Medical, as he was also by the College to the American Medical, Association. Of this national Institution he was at one time the Secretary; and made a very valuable and efficient officer. Indeed, it may be truly said, without detracting from the merits of others who have held that position, that it was never filled more worthily and more satisfactorily than by him. His clear and distinct voice, quick perception, and agreeable manners, were qualities not often united in equal degree; and, with his diligence and method, contributed greatly to the facility and dispatch of business.

His fondness for society led him to take great pleasure in these professional reunions, whether held in this city, or abroad. They furnished him at once with an agreeable relaxation, and an opportunity, which he gladly improved, of forming many pleasant and cherished acquaintances.

In 1850 he was one of the delegation sent by the College to the Convention which met at Washington for the revision of the United States Pharmacopœia.

He was also one of the earlier physicians of the Episcopal Hospital, and served several years in that capacity; resigning, on account of the inconvenient distance, in 1855.

In January, 1854, he was elected a member of the American Philosophical Society.

Having chosen for especial cultivation the Materia Medica, as the branch of the Profession most in accordance with his taste, Dr. West delivered several courses of lectures on that subject, as a member of the Philadelphia Association for Medical Instruction. He was well qualified to impart to others the knowledge which he possessed; his matter was well arranged and well written, his enunciation was good, his delivery easy and natural; and he was at great pains to give all possible illustration, as well by choice specimens of every article, as by a series of excellent engravings which he purchased at considerable cost.

In the year 1850, Dr. Wood was transferred to the Chair of the Practice of Medicine in the University of Pennsylvania, and Dr. West became a candidate for that of Materia Medica, vacated by his removal.

The circumstance that he had for an opponent a personal friend, may, in some measure, have paralyzed his exertions; for his was an unselfish nature, and though he ardently coveted the prize, he would certainly have conducted the canvass with less spirit on that account. With diminished hope, but greater reason for success, he was subsequently an applicant for the same Chair in the JEFFERSON MEDICAL COLLEGE; and as it was one which he would certainly have filled with credit to himself and advantage to the Institution, he was, unhappily for both, permitted to fail here also. It was one of those conjunctures of unsuccessful merit, in which the vanquished, reviewing the causes of his discomfiture, might have found some compensation in the consciousness of desert which prompted the proud exclamation—*Victrix causa Diis placuit, et victa Catoni!*

Aware that no vacancy in either Faculty would be likely to occur again while he had the capacity and the desire to fulfil it, and his time being sufficiently engrossed by his public and private duties, he now resigned his membership in the Association, and to the regret of many who had profited by his course of instruction, and still remember it with pleasure, ceased henceforth to lecture.

He does not appear to have been particularly fond of composition; and consequently made few contributions to the literature of his profession. In the Transactions of the College for the year 1846, there is an account of a case of aneurism of the aorta occurring in an adult, reported and read by him, and interesting from the circumstance that the autopsy revealed also a complete obliteration at one point of the cavity of that vessel—as if from a ligature tightly drawn around it—the constriction being probably congenital; and, so far as I have been able to ascertain, this is the only considerable paper extant from his pen.

Unlike too many who, erroneously supposing that they have become an authority to themselves, cease to be conversant with the ideas of others, he continued to read the more important works as they issued from the press, and being a diligent and conscientious student, kept even pace with the progress of Medical Science.

His mind was not remarkable for originality, and he was perhaps too much inclined to leave things in their beaten course, beneath the shelter of unexamining veneration; but besides that this is a venial fault, he appropriated with due discrimination all that was necessary for his own guidance; and had not only the high merit of being a wise and learned physician, but from his well-garnered stores frequently dispensed light and information to others. "While we breathe and move, while we imagine and invent," says LORD LYTTON, "we ourselves are laying up matter for the ridicule of posterity; and SIR THOMAS BROWNE intensifies the same idea when he declares, that "no sick man ever dreamt such crudities as waking Philosophy has embodied in its systems." Medicine has its own share of these vagaries; phantoms in the form of poisons, miasms, and malaria, people its whole atmosphere; and next to the praise of exploding the baseless theories which prevail, is the forbearance that refrains from adding to their number. Dr. WEST was more profitably employed in the careful observance of facts, from which he was well aware that sound deductions could alone be drawn. He never permitted himself to fall into a course of blind routine, or to be led astray by undue deference to authority; but patiently wrought out his problem for himself in the light of all the knowledge he could bring to bear upon it, and having

made a cautious and scientific diagnosis, prescribed with skill and judgment the appropriate treatment.

It is a subject for self-congratulation, Mr. President, that of the three Fellows with the preparation of whose memoirs I have been lately charged by the College, I could speak in the language of high and deserved encomium. Each of them, moreover, was remarkable for some prominent incident fixing our attention and ennobling the nature which he wore. The amiable and gentle YARDLEY, expiring in the actual discharge of professional duty; the reticent and undemonstrative, but resolute and intrepid REMINGTON, responding to a call of distress, by taking his life in his hand and hastening to a solitary country-house, where death in an appalling form had stricken down more than half the members of a family, and there, *alone*—for of the astonished neighbors, absorbed in thoughts of their own safety, none dared approach to offer help—amid the dying and the dead, striving day and night, all unconscious of the sublime heroism of the deed, to avert the stroke of the Destroyer, bury his victims, and give aid and comfort to the few bereaved and terrified survivors; the kind and benevolent BEESLEY, burdened with the weight of more than seventy winters, and suffering moreover from a physical disability which endangered life, undertaking a distant and self-imposed mission of love and mercy to the destitute and famishing inhabitants of the South;—these all, and severally, awaken our sympathies and call forth our admiration. They were good men and true, and worthy to be held in affectionate and lasting remembrance; but notwithstanding their peculiar virtues and general excellence, it is no disparagement to say that no one of them possessed the rare union of moral, mental, and physical grace, the cultivation, polish, and refinement, which formed the beautiful character—*teres et rotundus*—of Dr. WEST.

Premature age had lately effaced some of the lineaments of beauty, but to those who knew him in early life, he appeared to have been moulded in all the prodigality of nature. He was a tall, well-shapen, and very handsome man; his hair, which had grown gray and thin, was originally black, luxuriant, and curling; his features were regular and sharply defined; his eyes dark and animated, and his expressive countenance always irradiated by the peace and serenity which dwelt within. He was frank and cordial in his address; affable and easy in his demeanour; in manner uniformly courteous and urbane; and of warm heart, sunny smile, and pleasant words. His disposition was generous, unselfish, social, kind, and benevolent; his temperament genial, sprightly, and buoyant; and he was manly, upright, truthful, considerate, single-minded, and honorable in a degree rarely met with among men. His mind was well-informed, active, and intelligent; his conversation ordinarily playful and spirited, and not unfrequently enlivened by classical allusion or quotation. His even temper was not easily ruffled, yet he could, nevertheless, be deeply moved by any flagrant act of turpitude or littleness; and never failed on such provocation to vindicate with becoming spirit his sense of right and self-respect. He was fond of humour, delighted in a happy bon-mot, and enjoyed his own sallies with quite as much zest as those of others; greeting them with open and contagious merriment, and—*more modoque apis matutini*—extracting all their sweetness and application before he would consent to let them go.

It was said by KEATS that "the intensest pleasure he received was in watching the growth of flowers," investing them, as he did, with a sort

of personal kinship and regard; and the love of those beautiful creations, itself indicative of purity and goodness, was a striking feature also in the character of Dr. West. He had a green-house constructed for their accommodation, where he spent many happy moments in their company; and took especial interest in an orange tree whose age was coeval with his own.

He was early received into the Church; carefully trained from infancy in her holy ways; and to her instruction was owing the due proportion and fulness of his moral stature. At a later period he publicly assumed and ratified his baptismal vows in the rite of Confirmation, and ever after led a life in strict accordance with his profession. His piety, like his nature, was cheerful and happy; temperance, not abstinence, was his rule in regard to all innocent pleasures, and he had no sympathy with the asceticism which converts the blessings of Providence into occasions of sin. Perhaps it would be difficult to name any one who afforded a happier illustration of a Christian gentleman, or who exhibited Christianity in a more lovely and attractive form.

With so many winning attributes—a graceful person, charming manners, and a heart disposed to the enjoyment of social life—his company was much courted, and he was a welcome guest on all festive occasions. He had beyond most others, the power to impart, and the capacity to receive, pleasure, and would have been excusable if, in the fervour of youth, he had been led to worship somewhat too frequently at her shrine. From this danger however, if indeed it ever existed, he was effectually shielded, notwithstanding his constitutional bias and the allurements which beset him, by the gentle influences of home, and his innate good sense, as well as by a profound feeling of religious obligation. He knew that too great indulgence in such festivities, however harmless in themselves, was incompatible with the right employment of time and the responsibilities of his vocation, and early determined, with praiseworthy self-denial, the bounds which he did not think it prudent to pass.

His acknowledged ability and acquirements, his numerous acquaintance, and extensive family connections, would have rendered comparatively easy the attainment of the highest honours and emoluments which Medicine has to bestow; but this would have exacted a more exclusive devotion than he was willing to give. He rightly thought, in opposition to the greater part of mankind—who earnestly intent on procuring the means of existence, often lose sight of the end—that life was given for better and more elevated purposes than to be wholly absorbed in the pursuit of wealth, fame, or pleasure; and endeavoured, as an accountable being, to solve the great problem of living well for time and for eternity. Having never married, he had fewer cares and responsibilities than fall to the lot of others, and was at perfect liberty to adopt such a course as he might deem most conducive to his own happiness. He early resolved with true Christian wisdom, that his time should not be so preoccupied by business as entirely to shut out matters of greater concernment; and therefore neither desired nor sought a very extensive practice. Every day, however, was fully and usefully employed; and, with its record of good deeds and sweet humanities, glided peacefully and calmly into "the past eternity," recalling the description of the happy man—

> "Whose yesterdays look backward with a smile;
> Nor, like the Parthian, wound him as they fly."

In the eager competition of the present day the higher code of ethics,

though recognized in words, is often violated in practice; and things from which the unsophisticated would recoil, are done with a view to popular favour, by many who are loud in their asseverations of probity and conformity, and would perhaps indignantly repel any imputation of questionable morality. He soared far above all such paltry and unworthy expedients; preferred to err, if at all, on the side of scrupulousness and reserve; and had too great a regard and veneration for his profession to do ought, however promotive of private advantage, that might derogate from its usefulness, dignity, and respectability. In this, as in divinity, and in everything else, "the labourer is worthy of his hire," and services always arduous, and frequently involving great risk and sacrifice, should be generously as well as gratefully acknowledged; but its duties and responsibilities were, in his judgment, too sacred to allow it to be degraded into a mere matter of merchandise; and those to whom gain is the principal object in life, he would have thought more properly and congenially employed in the varied pursuits of commerce, business, and industry, from which they could not fail to reap a speedier and more abundant harvest.

In this respect, as in many others, he might well be proposed as a model for general imitation. Few, comparatively, have the opportunity and the ability to enlarge the boundaries of Medical Science; but the humblest individual may approve himself worthy of his vocation, and maintain its reputation unstained by any base, selfish, or mercenary conduct. Lord Holland could exclaim with commendable pride—

> "Nephew to Fox and friend to Grey;
> Enough my meed of fame,
> If those who've deigned to watch me, say
> I've tarnished neither name;"

and this negative ambition—high praise where nothing more is attainable—is within the reach and should be the aim of all.

Dr. West was never forward in the assertion of his mere personal interests; he trusted to his own merit to justify his claim to public confidence; and found in the approval of his own conscience and the respect and esteem of his fellow practitioners, an ample reward for any pecuniary loss he may thereby have incurred.

He was educated in a school where sound learning was taught, pretension discouraged, and lofty ideas of delicacy and honour were inculcated. The profession so signally illustrated by the preceptor, was adorned by the equal virtue of the pupil; and not only was its escutcheon unsullied by any doubtful action, but it lost nothing in his hands of its ancient repute for charity and benevolence.

The generosity of his disposition was shown, among other things, by his reluctance to exact the full professional remuneration from those to whom he thought it might be burdensome. The longer and more frequent his attendance in such cases the less, in proportion was sure to be his charge, and to prevent any uncomfortable feeling of obligation he often made it merely nominal. To women who kept boarding-houses, and generally to those who depended upon their own exertions for a livelihood, his services were always gratuitous. They serve God well who serve his creatures, and Dr. West might have requested the Presence in the chamber, with as much truth as did Abou Ben Adhem, to write down his name "as one who loved his fellow-men," for there was no form of human ill which he was not at all times ready to do what was in his power to mitigate and remove. His whole life was one protracted and

almost unrequited attendance upon the poor; and never did the tale of suffering fall upon an averted ear, or fail to awaken fraternal sympathy. He was a manager of the Society for the Reformation of Inebriates, and took a warm and active interest also in many other works of Christian and general benevolence. He was at one time a member of the Vestry of Christ Church, represented that venerable parish in the Diocesan Council, and was frequently placed in positions of prominence and trust. He held the offices of Physician to Christ Church Hospital and to the City Orphan Asylum until his death, serving those charities respectively, thirty-two and twenty-three years; thus having constantly under his care throughout those long periods of time both extremes of humanity. Many of the old have had their sufferings relieved, their sorrows soothed, and their passage through the dark valley lightened by his medical skill, his Christian sympathy, and his loving ministrations; while his orphan flock found in him a father and a friend, whose interest, counsel, and encouragement were generous incentives to good conduct and exertion.

Thus usefully occupied with his public and domestic duties, the beloved centre around which his family revolved, respected by all who knew him, and the object of affectionate attachment to a large circle of friends, time passed serenely and almost perceptibly away, touching him so gently in its flight, that, until within the last few months, he might reasonably have looked forward to the enjoyment of a green old age. It was not that he had been exempted from the cares and sorrows incident to human nature, for his lone walk had been through shade as well as sunshine; but these, however keenly felt, were not allowed to disturb his equanimity when abroad; and to the casual eye he appeared to be, as indeed he was, one of those happily constituted beings who are

> "Blest with a kindly faculty to blunt
> The edge of adverse circumstance, and turn
> Into their contraries, the petty plagues
> And hindrances with which they are beset."

There was nothing, therefore, in the even tenor of his existence, nor in faculties overtasked since youth, which should have awakened anxiety, or caused any forebodings of premature decline. But "the wings of man's life are plumed with the feathers of death;" and the machine gave way at last less from any undue friction to which it was subjected, than from the perishable quality of its own material. The gout, which was a disease hereditary in his family, and to which he was occasionally subject, had ceased to manifest itself in its more regular form, but was nevertheless insidiously undermining his system. A slight tendency to diarrhœa, which he supposed secured for him freedom from its invasion, was permitted to continue too long unchecked. He went more seldom into society; began to lose flesh; other symptoms of physical failure soon became visible; and it was evident to all that he was growing in age much more rapidly than in years. Yet he complained of no indisposition, and would admit of no impairment of strength; his frame was unbowed, his eye was bright, his spirits good, and he continued unabated his attention to business, until prostrated by the excessive heat of the weather in July of the present year.

"Coming events" are said, sometimes, to "cast their shadows before;" and it is very probable, though he said nothing to his family on the subject, that he was not wholly unaware of his declining health. He asked

a friend, who was about to leave the city, as he accompanied her to the door, to step into the parlor and sit with him awhile, saying that he might never see her again; and his will, which he had written and signed, was so placed that it would be one of the first objects found after his death. He, no doubt, thought that the eye of affection would not be slow to discover what he could no longer conceal from himself; and with his wonted consideration shrank from inflicting the pain which such a disclosure would give.

When he finally became ill, he complained chiefly of an overwhelming sense of debility, even though perfectly at rest in bed, and of an almost intolerable feeling of faintness, or distress about the præcordia,—as if from paralysis of the nerves of the cœliac plexus—with the most complete anorexia. During the first two or three weeks of his illness, he seems to have cherished little or no hope of recovery; and when allusion was subsequently made to some matters to which he thought that undue importance was attached, remarked how insignificant they appeared to one who had been brought face to face with death. After this time he became more comfortable in various ways, and on one or two occasions there even appeared to be some tendency to recuperation; but these favourable indications unhappily proved to be fallacious. The function of nutrition, long impaired, was now suspended; the food of which, though without appetite, he took enough to support life, and which was, moreover, well-digested, ceased to be assimilated; emaciation progressed and became extreme; and after one cheering interval of promise extending through a period of ten or twelve days, and reaching to within a week of his death, his stomach suddenly refused to take further nourishment, and he sank gradually and quietly into the grave; retaining his consciousness almost to the last, and comforted in his departure by the well-founded hope of better things beyond, which had made his path to be "as the shining light, which shineth more and more unto the perfect day." He died on the 24th of September, 1868, in the fifty-ninth year of his age.

His disease, so far as it admits of a discriminative appellation, was one of the protean forms of atonic gout, synonymous with constitutional decay. There was no particular implication of brain, lungs, heart, liver, kidneys, nor indeed of any other appreciable part, unless it were perhaps, towards the close, a disposition to inflammation of the mucous membrane of the stomach and small intestines. He had had, as just stated, for several years, some increased peristaltic action, hardly amounting to diarrhœa, which he probably referred to undue hepatic secretion; and here, there is reason to think, originated the first link in the chain of morbid action.

I have thus sketched, in rapid outline, the life of our friend from the cradle to the grave; a task which I little thought when, nearly thirty years ago, he was elected on my nomination a Fellow of the College, would be devolved upon me. An abler pen had drawn a portrait more worthy of its subject; but his very excellence would have made it difficult for any one, in a space so brief, to do full justice to such a theme. Enough, however, has been said to unveil to the gaze of partial friendship, a character of such singular grace, modesty, and worth, that the softening touch of "the Beautifier of the Dead" need hardly be invoked to render it more lovely and attractive. "The greater part," says Sir Thomas Browne, "must be content to be as they had not been, to be found in the register of God, not in the record of man;" *his* name we may humbly

hope has been inscribed on the one, and we are all living witnesses how deeply it has been impressed on the other. Death loves, we are told, a shining mark; and if we are tempted to repine that he was taken from us while yet his sun was in the full brilliancy of its evening radiance, we should recollect that wisdom is gray hairs to man; an unspotted life, old age; and that the existence, however brief, is really long, which accomplishes the great object for which it was given. We have seen him, after the manner of his DIVINE EXEMPLAR, going about doing good, healing the sick, binding up the broken-hearted, caring for the fatherless and the destitute, and while thus laying up treasures above, graving also for himself below, "an epitaph on every tongue." There are few persons who have given so large a proportion of their time to works of mercy and benevolence, and fewer still who have been so deeply and universally beloved. It was well observed, on a late occasion, by Dr. MORRIS, that "he had endeared himself to the Fellows as much as it was possible for one man to endear himself to another." Their regard was as warmly reciprocated by him. He took great pleasure in meeting with them in this Hall; and has evinced, by his last formal act, the interest which he felt in their welfare, and his desire to be held in remembrance by them. We hardly required such a memorial. The semblance of his manly form, arrayed in all the noble attributes of his character, will often rise upon our mental vision. We cannot forget his genial smile and hearty greeting, his good sense, courteous bearing, sincerity of purpose, lofty principle, and uprightness of conduct; his gentle acts of love and charity will long linger in our hearts; and we shall dwell with affectionate regret on his knightly worth and chivalrous honour, *sans peur et sans reproche;* "sorrowing most of all," as we recall the many social and amiable traits which made him a pleasant colleague and a delightful companion, that we shall hear his voice, and "see his face no more."

"Heu, quanto minus est cum reliquis versari quam tui meminisse!"

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The following resolutions adopted on the occasion of the death of Dr. West, by the Medical Profession of Philadelphia, by the College of Physicians, and by several of the charitable institutions with which he was connected, are subjoined as further illustrative of his character, and of the high estimation in which he was universally held.

COLLEGE OF PHYSICIANS.

"At a stated meeting of the College of Physicians, held on Wednesday evening, October 7th, 1868, the following resolutions offered by Dr. Littell, were unanimously adopted:—

"*Resolved,* That the College records with deep regret the death of its late Fellow, Dr. WEST.

"*Resolved,* That by this sad event, the Fellows have lost a friend and associate whom it was always a pleasure to meet; whose honourable conduct and genial qualities had won their confidence and regard; and whose interest in the College, manifested by a long course of constant and faithful service, was crowned by the bequest of his valuable library.

"*Resolved*, That in accordance with the general custom thus to preserve a memorial of our departed members, especially of those who have deserved well of the Profession, one of the Fellows be appointed to prepare a necrological notice of Dr. West, to be read before the College, and published in its Transactions.

"*Resolved*, That the Secretary be instructed to furnish to the family of our late colleague a copy of these resolutions, with the expression of the respect and sympathy of the College."

On motion, Dr. Littell was appointed to prepare the memoir contemplated under the third resolution.

Extract from the minutes.

JOHN H. PACKARD, M. D., *Secretary*.

## CHRIST CHURCH HOSPITAL.

"Office of Christ Church Hospital,
Monday, Oct. 5th, 1868.

"At a meeting of the Board of Managers held this day, the following minute was unanimously adopted:—

"*Resolved*, That the Managers of Christ Church Hospital beg to express their deep and earnest sympathy with the family of the late Dr. West in their loss, and to transmit to them the following copy of the record which they have caused to be placed on their Minutes.

"Died on the 24th of September, 1868, Dr. Francis West, in the fifty-ninth year of his age, and the thirty-third year of his services as physician to this Hospital.

"Elected at an early age to the medical care of the House, his connection with it had continued so long as to antedate that of all the present Managers and Inmates.

"Through this long service he had identified himself with all the interests of the Hospital.

"Preserving in a remarkable degree the buoyant spirit and animation of his youth, he always found a cheerful welcome in his visits to the family; who recognized in him not only the accomplished physician, but the warm and sympathizing friend.

"His genial heart, his cultivated mind, and his well-deserved character of a Christian gentleman, demand this record on the minutes of the Board, to perpetuate in the history of the Hospital some idea of one whose excellence must ever remain vivid in the memory of those who knew him.

"Extract from the minutes.

(Signed) JOSEPH K. WHEELER, Secretary of the Board."

## ORPHAN ASYLUM.

"*Resolved*, That the managers of the Philadelphia Orphan Society record with deep sorrow, the death of Dr. Francis West, the Senior Physician of the Asylum.

"*Resolved*, That during the long period of his attendance in the Institution, his ability, kindness, devotion and success, in alleviating the sufferings of the sick, and in maintaining the general good health of the Family, have secured to Dr. West the warm gratitude of the Managers, and the sincere affection of the objects of his care. To the hygienic improvements

suggested by Dr. West and his colleagues many years ago, the Managers ascribe the unusual health now enjoyed by the Children, and their remarkable exemption from epidemic and malignant diseases.

"*Resolved*, That a copy of the above resolutions be transmitted to the family of Dr. West, with the assurance of the sympathy of the managers of the Orphan Society in their afflicting bereavement."

# SUMMARY OF THE TRANSACTIONS

OF THE

# COLLEGE OF PHYSICIANS OF PHILADELPHIA.

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1868. *May* 6. *Simple Form of Inhaler for Ether, &c.*—Dr. A. H. Smith called the attention of the College to a simple form of inhaler for anæsthetics which he had been using for some time past with great satisfaction. It consisted of an ordinary India-rubber ball, lined upon its inner surface with patent lint. A large-sized ball, about six inches in diameter, such as is sold in the shops for foot-ball, has cut in any portion of its surface an opening large enough to receive the face from the orbits to the chin, a notch being cut in the upper edge to receive the bridge of the nose, thus giving an aperture into which the whole face can be fitted closely, and any air excluded if desired, without the eyes being covered. A piece or pieces of patent lint are then sewed upon the whole internal surface, the prominences of the seams in which give a firm support for the stitches without penetrating the wall of the ball. Thus completed we have a simple, cheap, and efficient inhaler, giving the combined advantage of rapidity of action with economy of anæsthetic fluid. It furnishes a large evaporating surface for supplying vapour to the respiratory organs, and at the same time its covering of gum prevents the escape of any vapour externally, thus obviating any waste of material. So fully is the anæsthetic economized, that complete unconsciousness has been produced with a fluidrachm of the mixture of one part chloroform to two of ether (by measure), and by a half ounce of pure ether, in very much less time than by any other method. It is very portable, easily rolled up and put into the pocket, and will last for a long time in constant use. In obstetric practice, where a prompt and certain effect is wanted in lulling transient pain, it is exceedingly useful. In selecting a ball, one with thin, flexible walls is much to be preferred.

*June* 3. *Numerous Amputations for Gangrene on the same Subject.*—Dr. Forbes read the following communication, the particulars of which were given him by Dr. Prevost, in whose practice the case occurred :—

A. Villasinon, a native of Zacatecas, Mexico, forty-six years of age, and a miner by occupation, suffered amputation of the extremities at the dates indicated. Each operation was for gangrene.

April, 1849, when twenty-five years of age, great toe of left side.
May, 1856, tarso-metatarsal articulation of same side.
May, 1857, below the tubercle of left tibia.
October, 1858, just below the lesser trochanter of left femur.
April, 1861, great toe of right side.
May, 1863, below the tubercle of right tibia.
May, 1864, just below the lesser trochanter of right femur.
May, 1865, index finger of right hand.

In each of the attacks of gangrene the amputation was performed after the lapse of from five to seven weeks; in every attack there was intense pain from its inception until the removal of the part by amputation. After the operation the recovery in every case was complete, and without any untoward symptom. The large arteries were always found to be healthy at the point of amputation. Chloroform was used on each occasion. At the operation for amputating the right femur the man had taken so much opium that after inhaling two ounces of chloroform without the slightest effect, it was deemed advisable to suspend the operation for twenty-four hours, and stop the opium in the mean time. The following day two drachms of chloroform were found sufficient; when the opium was stopped the man suffered great pain.

This patient is now living, and appears to be in excellent health; he is quite fat. He is the father of a number of children; all of them died soon after birth. He was the subject of syphilis in early life. His means of support have always been good. He has had no return of gangrene since the amputation of his right index finger in 1865, nor could he discover any cause for his previous attacks.

*Case of Thrombosis.*—Dr. Walter F. Atlee reported the following case of this:—

May 28th, I was called to Mrs. R. C., aged forty-eight years. She was a fleshy woman, with the appearance of sound health, for whom I had several times prescribed in the course of the past winter, on account of loss of appetite, and deranged digestion. The day previous, in the afternoon, after unusual exertion, and *greatly* overheated, she had *put up* twenty-one loaves of bread; she was suddenly called to a neighbour, who unexpectedly had given birth to a child, and needed assistance. On reaching the top of a flight of stairs, she felt something sounding in her head as "if a gong were being struck there," she lost power over her limbs to such an extent that she had to be brought home in a carriage; and vomited continuously.

When I saw Mrs. C. the next morning about 8 o'clock, she could not move her head on account of dizziness; the retching was constant, and loss of power was complained of in the limbs, though she could move them, and they had their normal sensations. The face was greatly flushed, and the pupils very much contracted. A very careful examination was made of the heart by auscultation, but no abnormal sounds were perceptible. Ice in small pieces was ordered to be kept in the mouth, and the vomiting had ceased when I saw the patient again in the middle of the day. In the evening she told me that she had slept a good deal in the afternoon, and felt much better.

The following day, the 29th, she was so much relieved that I saw her but once. She was able to hold up her head, and to take some food.

On the 30th, at three o'clock in the morning, she awoke out of a sound sleep, with a pain in the whole right lower extremity, which I believe excelled in severity any suffering I have ever witnessed. She said the limb was on fire; "that needles were sticking in every part;" that she "had cramp in every muscle," &c. &c. There was no contraction of the muscles, and nothing to be observed on examination to account for this condition, until, recollecting some accounts published of the pain in certain cases of thrombosis, I found that I could detect no pulsation in any artery of the limb, not even in the crural, under Poupart's ligaments.

The skin felt, too, decidedly colder than it did on the sound side, and a thermometer held against the inside of the thigh marked 87°, while on the other it marked 93°.

In the course of a few hours, the limb became discolored from half way down the thigh to the toes, as if rubbed with lees of port wine.

The pain was unrelievable, except for a short time, immediately after the injection of a grain of morphia under the skin, and the simultaneous administration of chloroform. In this way she would remain unconscious for an hour or thereabouts. There was some lessening of the pain also, when the limb was immersed in warm water, and it was kept therein until her death.

She died on the afternoon of June 3d, the same horrible pain continuing to the last.

The leg was then black, and somewhat swollen, as far as half way up the thigh, where the skin by degrees took its normal colour.

I would add that Dr. Norris was kind enough to see this case with me on the first of June. He could detect no abnormal sound to the heart.

It may be well to say, that the patient was still menstruating, and in fact commenced to menstruate at her regular period, on Saturday afternoon, the day of the plugging of the artery.

After death a partial examination of the body was allowed. The main artery was exposed from above the bifurcation of the common iliac to midway down the thigh, and removed from the body. About the origin of the profunda the vessel was redder than elsewhere, with evident thickening of the walls, and, when opened at this place, it was found blocked up by a fibrinous plug.

An examination of the heart was refused. The specimen was placed in the Museum of the College.

*Aug.* 5. *Cause of Doubtful Diagnosis of Presentation in Cases of Labour.*—Dr. GOODELL reported a case of labour:—

The child was a male, the mother a healthy primipara, and the labour normal; position L. O. A. At an early stage of the labour the liq. amnii dribbled away, but so green in colour as to lead to the suspicion of a breech presentation. After birth this green fluid was found to proceed from the child's mouth, whence it continued to ooze in varying quantities for five days. Taking hardly any nourishment, the child lingered for three weeks in a state of rigid opisthotonos, and died a loathsome mass of ulcers. Dr. Goodell further stated that he had met with a similar green discharge in a case of face presentation, which obscured the diagnosis very much in the earlier stages of labour. The head was delivered by the vectis, but the abdomen was so distended by an hypertrophied liver that much difficulty was experienced in bringing down the arms and delivering the body. This child was a large well nourished male, but died thirty hours after birth. The green fluid constantly oozing out in large quantities from the mouth. In both there was this peculiarity, that this fluid was neither coughed up nor vomited up, but steadily oozed out of the mouth.

In neither case was an autopsy made.

*Death from Rattlesnake Bite.*—Dr. E. B. SHAPLEIGH gave the following account of a case of rattlesnake bite, which occurred in this city:—

An intelligent German, Mr. B., the keeper of a beer saloon, called

Zoological Garden, on Ninth Street above Noble, had been in the habit for many years of petting rattlesnakes. He was familiar with their habits, and had full knowledge of the danger of their bite. Some years ago he had been bitten. Whisky and caustic were the remedies which he believed then saved his life. A week before the fatal accident I am about to record, he had received a large rattlesnake from the South. Every day he fondled this reptile, though it was very active and in a state he knew to be dangerous.

On the afternoon of July 31st, 1868, some gentlemen having called to see the new pet, Mr. B. attempted to take the snake from its wire cage, when it struck and fastened upon the side of the fore finger of the right hand, directly over second joint. He at once hurried to the drug store of Dr. Everson, nearly opposite, sucking the wound as he went. The Doctor had often warned him of his danger, and now seeing him come with his finger to his mouth suspected the trouble, and got ready some strong nitric acid, which was freely applied within two minutes after the accident. The unfortunate man then returned to his saloon, drank large quantities of liquor (exactly how much, I could not ascertain) and made a verbal will, saying that he should soon die.

When I entered the saloon twenty minutes after the accident, he was walking about flushed and excited, and in his sound hand held a tumbler half filled with brandy or whisky. He greeted me with some such expressions as, "It is no use—I am a dead man—I feel it in all my veins —tingling in the veins of my whole body, but worse in right arm and leg; liquor is the only remedy, and it does me no good." He seemed like one excited by liquor, but he did not stagger nor did he talk incoherently or in an unreasonable manner. The finger was dead white, as if frozen, and was constantly quivering; the hand and lower half of the forearm were much swollen. A fillet was immediately passed around the arm above the swelling, an incision made through the wound and caustic potassa freely applied. No pain followed knife or caustic. The skin of the swollen hand was punctured in many places, very dark blood oozing out with relief to the swelling. Ten minutes after my arrival, on attempting to rise from his chair he fell prone on the floor. He was placed upon a lounge—grew rapidly livid, and stertorous breathing ensued. He died in about forty minutes after having received the bite. The last observable motion was the quivering of the wounded finger.

*Nov.* 4. *Case of Disease resembling "Phlegmasia Alba," in a Male Patient.*—Dr. J. C. Morris reported a case, now under his care at the Episcopal Hospital, and exhibited the patient, whose history (condensed from notes kindly taken by the resident, Dr. Barton) is as follows:—

D. M., aged nineteen, born in England, of healthy parents, came to this country when two years old, and enjoyed good health up to the commencement of the present disease. He worked as "roller" and "puddler" at an iron works for four years, and then went on a canal boat for six or eight months. About a year ago, he found one morning that his right leg and foot were swollen so that he could with difficulty force his boot on; he had no pain or other sickness. The next day the leg was so much swollen as to prevent his getting his boot on at all, and the enlargement continued increasing for a week, at the end of which time the limb attained its present size, which it has since retained, with slight fluctuations. He was admitted to the Episcopal Hospital, Sept. 29th,

1868. The circumference above the knee was nineteen inches, below the knee twenty inches, at the ankle seventeen inches. The left leg was also somewhat enlarged. General appearance healthy, heart normal, and no signs of disease of liver or kidneys are perceptible, except a few waxy casts in the urine. No glandular enlargements to be detected in the abdomen or neck. The limb scarcely pits on pressure, the skin and temperature normal.

He was directed to keep the recumbent position and to take infusion of juniper berries with cream of tartar freely. Under this treatment the swelling diminished considerably, so that by October 8th the circumference of the ankle was thirteen inches, and below the knee, that of the leg, was seventeen and a half. On the 12th, several small vesicles made their appearance on the anterior and inner surface of the thigh, which soon gave exit to a fluid which flowed at the rate of nearly a pint in twelve hours. The resemblance of this fluid to milk was most striking, when first discharged. On standing in a test-tube it coagulated spontaneously in a short time, but the coagulum had nearly disappeared the next day, while a layer of cream-like fluid had collected at the surface. The microscope showed the presence of a number of lymph-cells (or white blood-corpuscles) and fatty granules of irregular outline, closely resembling urate of ammonia, but soluble in ether, the evaporation of which gave a residue of ordinary fat globules.

The flow of this liquid continued from numerous small openings until October 17th, when he had an attack of erysipelas which yielded promptly to salines and iron. On the 28th, a similar discharge occurred again for a few hours. The measurements of the limb are now nearly the same as when he entered the hospital.

Dr. Morris believes the case to depend on some obstruction to the lymphatic vessels ascending from the leg to form the thoracic duct in the neighbourhood of the lower lumbar vertebræ, as this alone would account for the occasional swelling of the other leg. But no evidence of disease in this region can be detected by palpation.

Dr. Wood suggested its being possibly due to disease of the liver, as it recalled to him a somewhat similar case at the Pennsylvania Hospital, in which, however, no fluid was discharged. Dr. Stillé thought that the case must be considered one of Elephantiasis Arabum, and alluded to a report in the *Trans. Path. Soc.* XI., 302, of a case in which there was found between the skin and the proper fascia of the leg, a yellowish fluid which by ten minutes' repose was converted into a clear jelly, and on being boiled passed into a milk-coloured coagulum

1869. *Feb.* 3. W. L. Wells, M.D., presented the following *Report on Epidemics and Meteorology*:—

In 1868 there were reported in Philadelphia at the Board of Health 14,693 deaths, 760 more than in the preceding year, but with that exception less than in any year since 1861. Taking the population at 750,000 this makes one death in 51, or 1.95 per cent. of the total population.

This compares favourably with the mortality in New York, and still more so with that of European cities, as, for example, in 1865 there was in London 1 death in 41.2; in Paris 1 in 36.3, and in Vienna 1 in 31.4.

The deaths among males amounted to 7674; among females to 7019; and this excess of males, 655 in number, or 9.33 per cent. was (except

150) entirely among persons under 20, as 4153 males died under that age, and only 3652 females.

The number above given as the total includes the stillborn, 744 (36 less than in 1867), and those who died in the country and were buried in the city, 558 in number. On deducting these, we have remaining as the deaths in the city 13,391.

Of those born alive 27.65 per cent. died before attaining the age of 1 year, while not quite 27 per cent. was the proportion in the year 1867. Of those who had attained the age of 1 year, 12 47 per cent. died before attaining the age of 2 years, showing here also a larger mortality by more than 1 per cent. than in the year preceding. At the age of 20, 50.62 per cent. of those born alive would be dead, judging from the rate of mortality in the past year. The risk of death in the following decades would be, judging from the deaths, in

| 1867. | | 1868. | | | | |
|---|---|---|---|---|---|---|
| 22.00 | per cent. | 20.08 | from | 20 | to 30 | years. |
| 23.00 | " | 23.98 | " | 30 | " 40 | " |
| 26.17 | " | 26.40 | " | 40 | " 50 | " |
| 32.57 | " | 28.65 | " | 50 | " 60 | " |
| 44.15 | " | 41.01 | " | 60 | " 70 | " |
| 60.57 | " | 62.04 | " | 70 | " 80 | " |
| 83.45 | " | 83.33 | " | 80 | " 90 | " |

There are several reasons, however, which must prevent us from drawing conclusions with certainty from the above calculation. One of these is, that Philadelphia is a rapidly increasing community, and of course the deaths among the old in any one year cannot be compared with those among the young, if we wish to show the expectation of life, for the old were born when the population was small, and of course there are not so many of them and therefore not so many deaths as if the population had always been as great.

Another cause of error is the large number of young persons who settle in the city, so that according to the last census there were more inhabitants between the ages of 20 and 30 than between 10 and 20, this excess being chiefly observable in the number of females, of whom there were about 4000 more between 20 and 30 than between 10 and 20.

It is also probable that the number of the very old in cities, compared with that in the country, is diminished, not only by the wear and tear of life being greater in cities, but also by the retirement to the country of many who had attempted in their younger days to make their fortunes in the city. On the other hand, the number of the very old in the census and death reports is increased, both in the city and country, by the fact that among the lower classes many are ignorant of their age, and therefore have a tendency to exaggerate and give it in round numbers, so that probably some are set down at 100 who have not really attained that age. This would account, in part at least, for so large a proportion of the coloured population being registered as over 100.

On comparing the different periods of the year, we find that according to the universal rule in Philadelphia, more deaths occurred in July than in any month in the year, the mortality being 1900, or 12.93 per cent. of the total mortality (the proportion in 1867 was 12.88 per cent.); but this excess was not caused (as in 1867) entirely by the increased mortality in very young children, but was observed also in those between 40 and 50 years of age, while the mortality among adults generally stood in July only second to that in the month of April.

In those over 60, the mortality was greatest in December and January.

November was (as in 1867) the healthiest month, the mortality being 878, or less than half that in July; and this difference was caused almost exclusively by the difference among the very young, as among children under 1 year of age there were more than four times as many deaths in July as in November (the number being 832 and 206). Between the ages of 1 and 2 years, the mortality in July came second, being 194, while that in August was greatest, or 213. Between the ages of 2 and 20, the influence of hot weather seems to cease to be deleterious, at least almost, as April shows the greatest mortality between those ages, viz., 188; July is second, 181; December third, 179; June fourth, 178; August fifth, 168; while the healthiest month was May, 119; this being between the months which stood first and fourth in the list; and the difference between the two extremes is only 69.

The deaths from zymotic diseases were fewer in number than they have been for several years; thus, from scarlatina only 224 died, while in 1867, 367 died of it; in 1866, 491; and in 1865, 624.

The total mortality from the various low forms of fever, including cerebro-spinal meningitis, typhus and enteric fevers, was only 559, while in 1867, 1866, and 1865, it was 616, 574, and 1321.

Erysipelas shows 51 deaths, also a slight diminution.

The deaths from diphtheria were 119, exactly the same number as in 1867, but less than in previous years. Rubeola and croup both show a mortality (108 and 206) slightly greater than in 1867 (83 and 185), but less than in 1866.

But the most remarkable instance of this comparative exemption, was in the case of variola, which only caused one death, while the mortality in the years 1862, &c., was respectively 264, 171, 260, 524, 144, and 48.

Six deaths were reported from cholera; four and perhaps five of them in the district of the city supplied by the impure Delaware water, and which only contains one-seventh of the population: three of these deaths were in July, one in August, and one in April. The deaths from cholera in the years 1865, 1866, and 1867, were respectively 18, 910, and 57.

Pertussis was the only zymotic disease which was decidedly more fatal than previously, as 176 died of it, while in 1865, 1866, and 1867, the mortality was respectively 135, 80, and 65.

Of yellow fever five deaths are reported, but they all died elsewhere, and only appear on the Board of Health reports in consequence of the interments having taken place in the city.

The deaths from malarial fever (53 in number), were pretty generally distributed through the different wards, not more than five occurring in any one ward, and one of these, the 13th, is not only itself closely built up, but is entirely surrounded by closely built up portions of the city.

There were 104 deaths from heat fever, or coup de soleil, 88 males and 16 females, all but 4 being over 20 years of age. Most of them were of the labouring class, as is indicated by the fact that only 20 are marked born in the United States.

Among constitutional diseases tuberculosis was, of course, the most fatal.

The total deaths from phthisis amounted to 1995, 48 more than in 1867, and 51 more than in 1866, but less than in 1864 or 1865. As regards the sex of those who died, we find 1000 males and 995 females, the males being in an excess of 55 in the first half, and the females in an ex-

cess of 50 in the second half of the year; this corresponding with 1867, when more males died in each of the first three months of the year, although there was in the whole year a preponderance of 63 females.

The ratio of the deaths from this cause to the total deaths (excluding stillborn) was 14.3 per cent., or 1 in 7, while in 1867 the proportion was 14.8 per cent., or 1 in 6.75. This shows, as compared with the preceding three years, an increase in the relative mortality, as in those years the ratios were 1 in 8.42; 1 in 8.47; and 1 in 8.64.

More deaths from phthisis took place in April than in any other month, the number being 249; next came January, 214; February, 181; December, 171; and March, 170. The fewest deaths occurred in July, viz., 130; and next in October, 135. This is very far, however, from being always the rule; for, in 1866, October, instead of being next to the last on the scale, was next to the first, and April, instead of being first, was ninth.

When, however, we compare the different seasons together, we find that summer followed the usual rule, showing the least mortality.

Most died between the ages of 20 and 30; then between 30 and 40; then between 40 and 50; then between 10 and 20; seven deaths took place over 80, five of them in April.

Besides the deaths ascribed to phthisis, 48 were set down to hemorrhage of the lungs, some of which also were probably caused by tubercles.

Among adults 1721 died of phthisis, one-fourth of the entire number of deaths, 6888.

Of those who died from all causes between the ages of 20 and 30—1383 in number—583, or more than 42 per cent., died of phthisis.

Tubercles in the abdominal cavity (marasmus and tabes mesenterica) caused 588 deaths in 1868, to 565 in 1867.

Scrofula caused 65 deaths to 68 in 1866, and 54 in 1867.

Rheumatism and gout caused respectively 16 and 5 deaths in 1868, numbers not varying essentially from those shown by the tables for the two preceding years.

Diseases of the nervous system caused a mortality slightly greater than in previous years, thus:—

| | 1866. | 1867. | 1868. |
|---|---|---|---|
| Meningitis caused | 371 | 394 | 382 |
| Apoplexy | 188 | 142 | 201 |
| Congestion of the brain | 409 | 286 | 368 |
| Softening of the brain | 50 | 57 | 78 |
| Paralysis | 182 | 231 | 248 |
| Epilepsy | 28 | 23 | 32 |
| Tetanus | 28 | 23 | 22 |
| Convulsions | 697 | 584 | 704 |
| Puerperal convulsions | 27 | 27 | 27 |
| Totals | 1980 | 1767 | 2062 |

More deaths from apoplexy occurred in winter, according to the general rule, but in autumn fewest died.

The total mortality from diseases of the nervous system in 1868, amounted to 15.4 per cent. of the total mortality from all causes.

Diseases of the circulatory system caused, in 1866, 437 deaths; in 1867, 483; and in 1868, 518 deaths, showing here also a slight increase.

The mortality from this cause amounted to 3.87 per cent. of the total mortality.

Diseases of the respiratory system (excluding phthisis) caused, in 1866,

1342 deaths; in 1867, 1082; and in 1868, 1227 deaths, or 9.16 per cent. of the mortality from all causes.

Diseases of the digestive system (leaving out cholera and marasmus) caused, in 1866, 2595 deaths; in 1867, 1936; and in 1868, 2151 deaths, or 16.06 per cent. of the mortality from all causes.

Only 76 deaths were caused by diseases of the genito-urinary system.

The following deaths may be set down as having been caused by congenital defects, viz.:—

Debility, 412 under 1 year (there were in all 600).

Cyanosis and asphyxia, 149.

Inanition, 216 under 5 years (there were in all 255).

Malformation, 24.

The mean temperature of 1868, as compared with that of the past 44 years, was a little low, viz., 53¼° Fahr., while the mean of 44 years was 53½°. The warmest year, viz., 1828, had a mean temperature of 55¾°; and the coldest, viz., 1836, 49°.

When we compare the temperature of each month with the mean for 44 years, we find that the cold months were decidedly colder, and the warm months decidedly warmer, than the average; thus February, the mean of which for 44 years was 33° Fahr., had a mean of only 26.65° in 1868, while January, March, April, May, October, and December, were also all colder than is usual; but on the other hand, June, July, August, September, and November, were warmer than the average.

The whole amount of rain which fell in 1868 was 51.33 inches, while the average annual fall of rain for the last 31 years is 45.71 inches. The month in which most rain fell was September, 8.91 inches; next May, 7.00 inches. The smallest amount was in October, 1.73 inches, and next in August, 2.06 inches.[1]

*Case of Thoracic Aneurism; with some remarks upon continued and obstinate Eructation as a Symptom of the Disease.*—Dr. Walter F. Atlee communicated the following case and remarks:—

In the spring of 1865, a merchant, who had been under my care for some eighteen months, died suddenly at the Continental Hotel, in this city.

This gentleman had always enjoyed good health, and had never complained of anything, except the annoyance and distress caused by constant eructation. This discharge of gas from the mouth always followed the introduction of food into the stomach, and frequently was so continuous that he would pass the whole night without sleep, forced to sit up, or even to stand, in order to allow the flatus to escape more readily. No remedial agents, that I tried, and they were many, afforded any marked relief.

Unable to discover any other cause for this condition of things, I concluded that there must necessarily be some lesion of the pneumogastric nerve, or that its function, so far as the stomach and œsophagus were concerned, was interfered with by the pressure of a morbid growth. The pneumogastric nerve by its motor fibres holds under its dependence the muscular tunics of the œsophagus and of the stomach. By the contractions of the œsophagus food is pushed, accumulated, and held fast in the stomach. After section of the pneumogastric, as seen in experiments

[1] Several tables prepared to accompany this report are unavoidably omitted.

on animals, the force of these contractions is diminished, and the contents of the stomach are pushed into the mouth by pressure exercised upon the stomach by the diaphragm and the abdominal walls. The gases naturally occupy the upper portion of the stomach—habitually the cardiac orifice; and if this opening be relaxed, they enter the œsophagus, and, not restrained by its contraction, pass up into the pharynx. Moreover the movements of the stomach being impeded, the digestion of the food is more or less imperfect, and consequently a greater than usual amount of gas is disengaged. The experiments of Longet, and of Vulpian,[1] particularly, are conclusive, I think, of such being one of the results of injury to the par vagum.

I will state, moreover, as evidence of the apparently good physical condition of my patient, that his life was insured some few months previous to his death, in the Penn Mutual Life Insurance Company of this city, where the medical examination was made by an accomplished and experienced physician, one in every way qualified to detect any discoverable lesion.

One night, a niece of the gentleman, who occupied an adjoining bedroom, heard him calling her and trying to open the door. When she opened it, he was standing there, blood pouring from his mouth, and, after a vain effort to speak, he fell dead. He had spent the evening with a friend in the hotel, and had left him only a few minutes before, apparently as well as usual.

The physician attached to the hotel wished to give a certificate of death to the effect that the fatal hemorrhage had proceeded from the rupture of a branch of the pulmonary artery, the consequence of tubercular ulceration. I never had found any symptoms of pulmonary disease during his life, and I therefore urgently demanded a *post-mortem* examination of the body.

The constant eructation from which this gentleman suffered during life, as said before, had been attributed to pressure upon the par vagum, and the manner of his death led me to believe that this pressure had been caused by an aneurism of the aorta where it crosses the left bronchus, alongside of this nerve, and which had opened into the air passage.

On examining the body this was found to have been the case. A small circumscribed dilatation of the aorta, in size not larger than a walnut, was situated on that part of the vessel that passes behind the left bronchus, into which it opened by a ragged orifice about the third of an inch in diameter. The sac of this aneurism lay against the pneumogastric nerve.

I wish to call the attention of the College to this case, because it presents a sign of a certain value in a terrible and most obscure disease. In fact, in the whole category of ills, there is probably no one so latent as thoracic aneurism. Laennec believed that there was no sign pathognomonic of the affection, except the external tumour. Crisp, in his excellent treatise,[2] says that the signs of thoracic aneurism are, in many cases, so obscure that the disease is often unsuspected until it is revealed by a post-mortem examination. "I have met," he says, "with numerous examples of large aneurisms in the chest which were not discovered by ex-

[1] In the *Revue des Cours Scientifiques*, No. 46, October 13, 1866.

[2] A Treatise on the Structure, Diseases, and Injuries of the Bloodvessels. London, 1847.

perienced stethoscopists." In the very remarkable article by Dr. Lidell, of New York, published in the *American Journal of the Medical Sciences*, January, 1867, are recorded ten cases of internal aneurism, in every one of which death "occurred suddenly and unexpectedly to all concerned;" there was during life no suspicion of the existence of such an affection. In the *Transactions of the Pathological Society of London* I have found the records of seven cases of thoracic aneurism, that opened, as did the particular one to which I call attention, into a bronchial tube. In not one of them, it is expressly stated, "did the symptoms or results of stethoscopic examination lead to the suspicion that intra-thoracic aneurism of any kind existed." (*Loc. cit.*, vol. xvii. page 107.) I would here note that in one of the cases, related by Mr. Spencer Wells (vol. x. page 71), it is said that the patient had long complained of dyspeptic symptoms; and in a second, reported by Dr. Leared, he remarks "that it is remarkable that the patient complained solely of dyspeptic symptoms."

Within the past few years symptoms of thoracic aneurism have been described, the result of pressure upon the various nerves contained in the chest. In a recent number of the *Dublin Quarterly Journal of Medical Science* is an article by Dr. W. Moore, on the symptomatic value of herpes zoster. According to this physician, this curious affection may be produced by pressure upon a costal nerve from enlargement of the aorta. Another and more important set of symptoms are those resulting from the pressure interfering with the functions of the sympathetic nerve; namely, contraction of the pupil, increased temperature with increased sensibility of half of the face, a slight alteration of the muscles of expression, increased flow of tears, and modification of the voice. These effects of lesion of the ganglionic system of nerves were described particularly by Dr. John Reid, of Edinburgh, in a communication to the *Edinburgh Medical and Surgical Journal*, August, 1839. On this subject, there are some remarks in the first volume of the *London Hospital Reports* (pages 206–7) by Dr. Davies, that I will transcribe. He says: "In a case of aneurism lately under our observation the almost complete obliteration of the cervical sympathetic nerve of the right side by the pressure of the tumour, . . . . . confirmed the view that the dilating fibres of the iris derive their power from that portion of the spinal cord which lies between the 5th cervical and 6th dorsal vertebræ—the *regio cilio-spinalis* of Budge and Waller. These filaments, emerging from the cord with the anterior spinal roots, enter the cervical sympathetic nerve, find their way upwards to the plexus situated around the internal carotid artery, and then entering the lenticular ganglion, leave that body in order to penetrate the sclerotic and reach the iris. Destruction of the above-named region of the cord, or division of the corresponding anterior roots or of the cervical sympathetic, cause contraction of the pupil. The balance of power being lost, the circular fibres of the iris (which are supplied with nervous force by the 3d pair of nerves) tend to cause and maintain a contracted condition of the pupil."

It was noted that in two of the cases of thoracic aneurism emptying into the bronchial tube, reported in the *Transactions of the Pathological Society of London*, it is stated that dyspeptic symptoms were complained of. What peculiar dyspeptic symptoms were manifested are not mentioned, nor is an explanation given of their presence. Crisp says more about such symptoms than any writer I am acquainted with. In speaking of

the symptoms of internal aneurism he says: In other cases, "dyspeptic symptoms are present, such as flatulence, acidity, and eructations. This derangement of the functions of the stomach, in consequence of the pressure of the sac on the pneumogastric or sympathetic nerves, is a very common attendant upon thoracic aneurism; and numerous patients who have laboured under this affection have been treated for indigestion" (*loc. cit.*, page 129). Dysphagia and apparent stricture of the œsophagus are frequently indicated as signs of thoracic aneurism, but the partially paralyzed condition of this tube, that allows the constant escape of gas from the stomach, has not, to my knowledge, been noted.

Jolliffe Tufnell,[1] in his monograph, does not direct attention to any trouble in digestion, and Lidell in the article already cited says exactly what Crisp has and no more. These two writers, so far as I can judge, have more carefully and rationally detailed the symptoms of thoracic aneurism than any others. Chambers, in his "Lectures chiefly Clinical," when speaking of a case of supposed internal aneurism, says simply, "You have here nearly all the signs of aneurism of the aorta; 1st. Pulsation; 2d. Whiz; 3d. Impaired deglutition; and 4th. Impeded circulation." There is nothing whatever said about any impairment of the digestion in such cases. This is the more remarkable, as this eminent physician has paid great attention to organic and functional affections of the stomach. In his celebrated work on *The Indigestions, or Diseases of the Digestive Organs functionally treated*, London, 1867, he treats most minutely of the phenomenon of eructation.

Its essential condition, he says, is the relaxed and open state of the cardiac end of the gullet. Gas warmed by the body tends to rise through the œsophagus as soon as that tube is relaxed. Instead of being retained by the powerful sphincter at the orifice of the stomach it finds its way upwards. He then makes three groups of cases of eructation.

1st. Those where there is simply a relaxed œsophagus, and the air, though only in natural quantity, breaks upwards.

2d. Where there is an excess of atmospheric air swallowed from habit, or in an attempt to relieve an uncomfortable feeling.

3d. Where carbonic acid is formed by alcoholic fermentation, unchecked by rectification.

Dr. Chambers gives a case of eructation from defective digestion, cured by pepsine; one from excess of air, swallowed from abnormal sensibility, cured by valerian and ammonia, and above all by shower baths; and another from alcoholic fermentation, cured by hyposulphite of soda. He gives none, however, from relaxed œsophagus, nor does he say anything further about it.

A careful search into a large number of works upon troubles of the digestive organs has failed to show one in which the true cause is indicated of the peculiar symptoms under which the patient, the subject of this communication, suffered.

I have thought it expedient, therefore, to call the attention of the College to long-continued, obstinate eructation as a sign, of a certain value, where it is present, of the probable existence of an internal aneurism which by pressure is interfering with the motor fibres of the pneumogastric nerve that supply the muscular tunics of the œsophagus and stomach.

[1] Successful Treatment of Internal Aneurism, Illustrated by Cases in Hospital and Private Practice. Dublin, 1864.

Death from the bursting of a thoracic aneurism is not uncommon, and in the vast majority of instances the existence of the affection is not suspected during life. Any symptom that promises to aid in its diagnosis is entitled to consideration.

*Cancer of Right Mamma; Secondary Cancer of Pleura and Bronchial Glands; Pressure on Azygos Vein and Right Bronchus; Left Hydrothorax twice relieved by Paracentesis; Subsequent Double Hydrothorax and Death.*—Dr. William Pepper read the following history: —

H. M., aged 42, coloured, was admitted to the Philadelphia Hospital in the winter of 1867, with a scirrhous tumour of the right mammary gland, which was removed by Dr. Levis. The wound healed and the patient was discharged May 22, 1868. She returned in three weeks with ulceration of the cicatrix; this soon healed, and she was discharged July 10. Upon August 20, she was re-admitted to the medical ward, complaining of dyspnœa which she said had come on within a few days past, without fever, cough, or pain in the side. On admission, her respirations were thirty-two to thirty-five; pulse ninety; no abnormal warmth of skin. Marked dyspnœa; respiration abdominal, and violent action of superior respiratory muscles also present; expiration prolonged with wheezing stridor. She also suffered from paroxysms of dyspnœa, during which her difficulty of breathing was intense. Tongue moist and clean; no vomiting or diarrhœa. Œdema of feet and ankles. Decubitus usually left lateral, thought she could also lie on right side; axillary glands enlarged and indurated.

*Physical Examination.*—On right side, percussion resonance fair at the apex, but below the nipple much impaired; probably in part owing to the position of the heart. On left side, absolute dulness from apex to base. The left side somewhat distended, the intercostal spaces level, but not bulging. Strong action of superior respiratory muscles, with marked elevation of both sides, but deficient expansion of left thorax. Over right lung, respiratory murmur exaggerated. On left side, clear and almost metallic bronchial breathing over the whole posterior aspect; in front, the breathing sounds very feeble over apex, but bronchial elsewhere. Vocal fremitus diminished, but not annulled. Heart sounds healthy, but feeble; heard over sternum, but also to the left of it. Ordered iodide of potassium, gr. x, t. d.; carbonate of ammonia, with tincture of belladonna; beef tea and milk punch f℥viij q. d.

*Sept.* 4. Symptoms aggravated; pulse slightly dicrotic; heart dislocated to right of sternum.

5*th.* Paracentesis performed. The trocar was introduced in the sixth interspace, about on a line with the anterior border of the axilla; the incision in the skin being made below the point of puncture, so that after the operation the skin closed the opening. Two quarts of rather thick dark bloody serum, containing no shreds of lymph, were withdrawn by Bowditch's syringe; the wound was dressed with patent lint and adhesive plaster, and the chest surrounded by a broad bandage. The fluid had a sp. gr. 1013, was highly albuminous, and on standing deposited a thick chocolate coloured sediment, composed entirely of blood globules; the supernatant fluid was clear, and soon presented a pale yellowish translucent coagulum, containing a small number of exudation corpuscles.

Immediately after the operation she expressed herself as feeling very much relieved. Pulse remained unaltered; respirations fell to twenty-

four. The heart returned to a position under the sternum. The apex of the left lung became resonant on percussion, and began to present a slight movement of expansion; and a broncho-vesicular murmur became audible here both anteriorly and posteriorly, with numerous friction sounds. At the same time the bronchial breathing, which had previously been present over the posterior part lower down, disappeared, and was replaced by very distant and feeble vesicular murmur.

7*th*. Effusion evidently accumulating.

8*th*. Dyspnœa marked, with a return of the paroxysmal attacks.

11*th*. Dyspnœa much increased; respiration forty-four, hurried and shallow; dulness again complete over left thorax, and physical signs the same as before the operation. Apex beat of heart at right border of sternum; heart sounds heard distinctly round to right axilla. Paracentesis again performed, the puncture being made with a very delicate trocar, and the fluid conducted through an India-rubber tube under the surface of water. Two quarts of reddish serum were drawn off, of sp. gr. 1014; of neutral reaction, and highly albuminous. On standing, a yellowish coagulum of moderate size formed which contained very few exudation corpuscles. Percussion resonance immediately returned down to level of fifth rib. Vesicular murmur became audible over whole chest, and bronchial respiration disappeared. Vocal fremitus also became more distinct, and the vocal resonance lost its bronchial character. The heart returned under the sternum; and its sounds became audible to the left. Respirations soon fell to twenty-eight, and became much easier.

15*th*. She has been quite easy since, with no paroxysms of dyspnœa, but effusion has again somewhat increased.

25*th*. Since the last note she has been feeling decidedly easier and stronger.

*Nov.* 9. From this date, her symptoms gradually aggravated, and her appetite and strength failed, though she continued to get out of bed daily. She suffered much from procidentia uteri, and prolapse of the rectum also ensued, with frequent mucoid stools. Dyspnœa increased somewhat, though it never again became urgent. Her mind also became dull, and occasionally slightly wandering.

She left her bed on the morning of December 29, 1868, but later in the day became dull and finally comatose; her respiration was gasping and very imperfect; the extremities grew cold, and death occurred quietly.

*Autopsy.*—Body much emaciated; brain and spinal column not examined. Complete procidentia uteri; os excoriated, but no cancer nor marked enlargement of this organ. Abdominal viscera presented no marked lesion. *Thorax.*—*Right Side*—Lung quite free from pleuritic adhesions, and no traces of inflammatory change in either layer of pleura. There were, however, both on the costal and pulmonary layer, numerous cancerous nodules projecting into the pleural cavity. Some of these were small, flat, and mushroom shaped, while others were much larger, from a half to one and a half inches in diameter, firm and nodulated. These larger masses were especially found along the posterior borders of the lung, and very probably were cancerous glands. There seemed to be an especial tendency for the growths to affect the border of the lung, forming teat-like projections; many of the smaller nodules, however, sprang directly from the pleura over the middle portions of the lung. The pleura around these deposits appeared healthy. As already said, some of the nodules were flattened and mushroom-like in shape. This

was especially true of those springing from over the middle portions of the convexity of the lobes—and was perhaps due to pressure formerly exerted against the costal surface. Upon making a section through any of these growths, they were found to vary in thickness from one line to one inch. They were evidently developed in the substance of the pleura, and had actually extended in but few cases into the tissue of the lungs. Immediately beneath the right mammary region, there were some prominent cancerous nodules. This pleural sac contained Ov of clear yellow serum, without any flocculi of lymph.

The *left* lung was very much compressed and contracted—occupying only the upper half of the pleural cavity; its base being on a level with the base of the heart, so that no lung intervened between the left face of the pericardial pleura and the corresponding portion of the costal pleura. The same projecting nodulated cancerous growths were found over the costal layer of the pleura, as existed on the right side; the pleura was also much thickened. The pulmonary and pericardial pleura was also dense, thickened, and very tough, the lung beneath giving a tympanitic resonance when percussed. In the substance of this thickened membrane, projecting into the pleural cavity, were very numerous cancerous nodules of varying size and thickness. In places it was found that the tough, thick, whitish membrane could be stripped off from the pleura proper—removing with it most of the cancerous nodules, which were consequently developed in the substance of this pseudo-membrane. There were others, however, developed in the substance of the pleura itself, and extended for a line or two into the tissue of the lung. The pleura investing the base of the lung was the seat of a cancerous growth half an inch in thickness. The tissue of the lung itself was condensed but smooth on section, and apparently healthy. This pleural sac contained sero-sanguinolent fluid in much smaller quantity than the right; the marked contraction of the left side having reduced the dimensions of this cavity.

The *trachea* was healthy: the right bronchus somewhat pressed upon by the cancerous bronchial glands, but not involved in the morbid growth.

The entire extent of the diaphragmatic layer of pleura on both sides presented extensive cancerous growths in the form of projecting nodules, or thick layers; the muscular tissue of the diaphragm was much thinned and atrophied.

The pericardial layer of pleura was the seat of marked cancerous growth; but the pericardium itself was healthy, nor did its sac present any effusion.

The *heart* was somewhat enlarged: the muscular tissue was rather pale, and on microscopic examination was found to have undergone marked granular fatty degeneration. The valves of the heart were healthy.

The *aorta* was of normal size, its adhesions to surrounding parts abnormally strong, and its internal coat presented several atheromatous patches, undergoing calcareous transformation. The great vessels rising from the arch were healthy, as was the œsophagus. The glands, which were especially the seat of cancerous growth, were those close to the lung, while those along the trachea and œsophagus were slightly enlarged but contained no morbid growth. The *thoracic duct* was somewhat dilated and quite tortuous, but, although several cancerous nodules were in its immediate vicinity, it did not seem to have been compressed. The hemiazygos veins were not compressed, and entered the azygos vein at the normal point. This latter vessel, however, in turning over the root

of the right lung to reach the vena cava superior, was strongly compressed between two large, firm nodulated cancerous masses.

All of the nerves passing through the thorax were healthy and not involved by the disease in any way, except the right phrenic nerve, which, in passing over the pericardium became adherent to and partially surrounded by a cancerous nodule. The growth did not enter the sheath of the nerve, but the pressure was so great that the course of the nerve was deflected and curved—following the outline of the morbid mass. Microscopic examination showed a large amount of fibrous tissue in the substance of the nerve; the nerve fibrils themselves were large, but granular and without double contour.

*Examination of the Cancerous Growths.*—The cancerous formations may, for convenience, be divided into those which were developed in the substance of the pleura or of the false membrane overlying it, and those which appeared as outlying nodulated masses, due to disease of the lymphatic glands. The former deposits were moderately firm in character, some of them indeed being quite scirrhous, while others were of the consistence of firm encephaloid. Pressure or scraping caused an abundant escape of almost milk-white cancer juice. The surface of a section appeared close in texture, and homogeneous; the prevailing colour white or grayish-white, spotted here and there with pink patches. Microscopic examination of the expressed juice showed numerous rather small cells, $\frac{1}{2500}$ to $\frac{1}{1500}$ inch in diameter, of various shapes—oval, caudate, rounded, or angular, with two delicate prolongations; they contained a single large nucleus. In only few instances were two nuclei seen. Very many of these cells contained a great deal of fine granular oil; some were completely converted into granule cells, and there was a large amount of free oil in granules and drops. Examination of sections showed a dense stroma of broad fibres, mixed with long fusiform nucleated cells, forming small loculi, in which the cells above described were contained. There were also seen in addition, larger cells of very irregular shape with two large, clear, nucleolated nuclei. A much greater variety in the cells, both as regards size, shape, and number of nuclei, was found in the nodules which had extended a few lines into the pulmonary tissue. The structure of the cancerous glands was even more typically scirrhous. They creaked under the knife, yielded a more scanty and paler fluid on pressure; and on microscopic examination showed a dense fibrous stroma with a comparatively scanty development of cells, small, oval, caudate or fusiform, and containing a single clear nucleus. There was also much less fatty degeneration of this part of the morbid growth.

*Remarks.*—The case which has just been recorded appears to present several points of interest; and especially in regard to the question of diagnosis. It will be observed, in considering this, that the determination of the condition of the left lung was complicated by an unusual combination of physical signs.

The signs furnished by the respiration and voice were not sufficient for this purpose, and indeed were not harmonious, since, with complete dulness extending from apex to base, so that alteration of the patient's position did not affect it, there was bronchial respiration over a great part of the thorax, with bronchophony, but, on the other hand, with deficient vocal fremitus. The idea of consolidation of the lung was further opposed by the character of the cough, which was dry and rare, and almost entirely unattended with expectoration. The signs which, however, conclusively

showed the presence of a large amount of fluid in the pleural cavity, were the distension of the chest with filling out of the intercostal depressions, and the marked dislocation of the heart to the right. It is not, indeed, very unusual at a certain point in the stage of effusion in acute pleurisy, to observe bronchial respiration and bronchophony associated with dulness on percussion; and these phenomena have usually been explained on the supposition that the pressure of the fluid is at this time sufficient to compress only the peripheral layer of the vesicular structure of the lungs, while the bronchial tubes remain patulous throughout the chief part of their extent, and the air freely enters them, producing strong bronchial sounds which are transmitted through the comparatively thin layer of fluid surrounding the lung.[1] It does not seem possible, however, to detect this peculiar combination of signs in every case of acute pleurisy, and even when present, it is for a very short time. It is certain, moreover, that the explanation just suggested cannot be applied to certain cases of hydrothorax, with widely different physical conditions, where yet these same signs have been observed. Thus in an unpublished case, reported to the Pathological Society of this city, by Dr. Rhoads, of serous effusion into the left thorax, so extensive in amount as to displace the heart to the right of the sternum, to distend the thorax and cause bulging of the intercostal spaces, and to compress the lung considerably, there were still most perfect bronchophony and bronchial respiration heard over the posterior, lateral, and even parts of the anterior surface of the thorax. Can such cases be explained by the hypothesis that the tension of the thoracic walls is so greatly increased by the very large amount of effusion in the pleural cavity, that they transmit the sonorous vibrations from the large bronchial tubes at the root of the lung, which are in contact with the posterior walls of the thorax? Or may it happen in some such cases that the pleura pulmonalis is so thickened and rigid that, despite the large accumulation of fluid in the pleural sac, it prevents an extreme degree of compression of the lung and maintains a patulous condition of the bronchial tubes, thus establishing a similar state of parts (so far as the production of the phenomena under discussion are concerned) as has been referred to in cases of acute pleurisy? It would appear probable that this latter mode of explanation might be applicable to the present case.

The diagnosis of an extensive collection of fluid in the left pleural sac being positively determined by the signs above mentioned, it was easy to surmise the cause of the effusion. The absence of all symptoms of inflammation of the pleura, taken in connection with the history of the patient, and the latent course of the hydrothorax, rendered the existence of cancer of the pleura sufficiently probable. The character of the fluid, moreover, as determined by paracentesis, corroborated this view, since the admixture of blood with the effused fluid is, I believe, more frequently met with in hydrothorax due to cancer of the pleura, than to any other condition of that membrane. Owing to the marked stridor of the expiratory sound, it seemed probable that there was implication of the bronchial glands, with pressure upon one of the large bronchi at the roots of the lungs; and it was also suspected, owing to the effusion being unilateral and upon the left side, that the same enlarged glands might compress the azygos vein before the entrance of the hemiazygos

[1] See Landouzy, Archives Générales, November and December, 1856.

vein. It will be seen, however, from the description of the lesion, that although the bronchial glands were enlarged and cancerous, and compressed the azygos vein, it was beyond the point where the hemiazygos vein enters it, so that the resulting hydrothorax would necessarily be bi-lateral. It is highly probable that the extensive effusion of clear serum, which was the immediate cause of death, may have been, in part at least, due to this compression.

Despite the undoubtedly incurable nature of the cause of the effusion, the indications for paracentesis were so positive and urgent (especially the marked distension of the chest with flatness on percussion from apex to base; the dislocation of the heart, with interference with its action, as shown by the feeble and dicrotic pulse; the œdema and coldness of the extremities; and the alarming paroxysms of dyspnœa, in which death seemed imminent), that no hesitation was permissible.

The operation has now been so frequently performed under the most varied circumstances, that its performance in the present case merits no special mention; it may be noted, however, that although a certain amount of air was undoubtedly admitted to the pleural cavity each time, not the slightest unfavorable consequence ensued.

In regard to the effects of the operation, it is interesting to observe how regularly the somewhat peculiar combination of physical signs above discussed disappeared and reappeared, varying with the varying amount of fluid in the pleural sac, and the consequent degree of compression of the lung.

Nothing could have been more satisfactory than the effect of the tappings upon the patient's comfort. She lived 115 days after the first operation, at which time her sufferings were intense and death appeared imminent, suffering no severe pain or dyspnœa, enjoying eating and sleeping, and, in every particular, in a quite tolerable state.

*March* 3. *Tracheotomy in a Case of Pseudo-Membranous Croup.*—Dr. Bache reported the following case:—

A little girl not quite three years old, was admitted into the Children's Hospital, January 14, 1869. For some days she had been suffering with pseudo-membranous croup, and had been for about twenty-four hours attended, at her parents' dwelling, by Dr. Packard. The measures adopted had seemed on the previous evening to have afforded some relief; but the urgency of the symptoms on the morning of the 14th was such, that Dr. Packard regarded tracheotomy as the sole remaining resource, and as the operation could not be performed to advantage at her home, brought her to the hospital with the view of its being done there.

On her admission there was great dyspnœa, with pale countenance, dilated pupils and lips of cyanosed hue, occasioning the usual expression of distress or anxiety so common in cases of asphyxia; with each inspiration, which was very laboured, there appeared across the abdomen immediately below the ribs, a deep sulcus. Auscultation and percussion showed the lungs to be permeable to air, and it was decided to perform without delay the operation of tracheotomy, in hopes of giving the child a chance for life; for it was obvious that if not relieved she could not live an hour.

The position selected for opening the trachea was below the thyroid body. On cutting through the skin and areolar tissue, and tearing the subjacent structures, the trachea was brought into view with several accompanying veins, the thyroid and its branches; one of the latter crossed

the trachea at right angles; in avoiding this the thyroid, as it ascended the right of the trachea, was cut. The hemorrhage, quite profuse, was immediately arrested by pressure of the fore-finger of the left hand, and with some slight difficulty the vein was secured by a ligature; one other small vein was also tied, when the trachea, after having been secured and steadied by a tenaculum, was slit and the tube introduced.

The little patient by this time was in such a condition of apnœa, that it was necessary to make pressure on the chest to keep up respiration. When this was re-established she was placed gently on a bed, where she breathed feebly unaided. In a little while the respiration became regular and the patient seemed comfortable. She was ordered an enema of milk and yelk of one egg, a tablespoonful of wine being beaten up with the latter. During the day she took a tablespoonful every hour of a mixture half milk and half wine-whey. From time to time lime-water spray was injected through the tube by an atomizer. At the evening visit, the cheeks being flushed and the skin hot, the mixture of milk and whey was ordered to be given every two hours, with five drops of sweet spirit of nitre. During the day the pulse ranged from 120 to 150 beats, and the respiration was thirty in the minute.

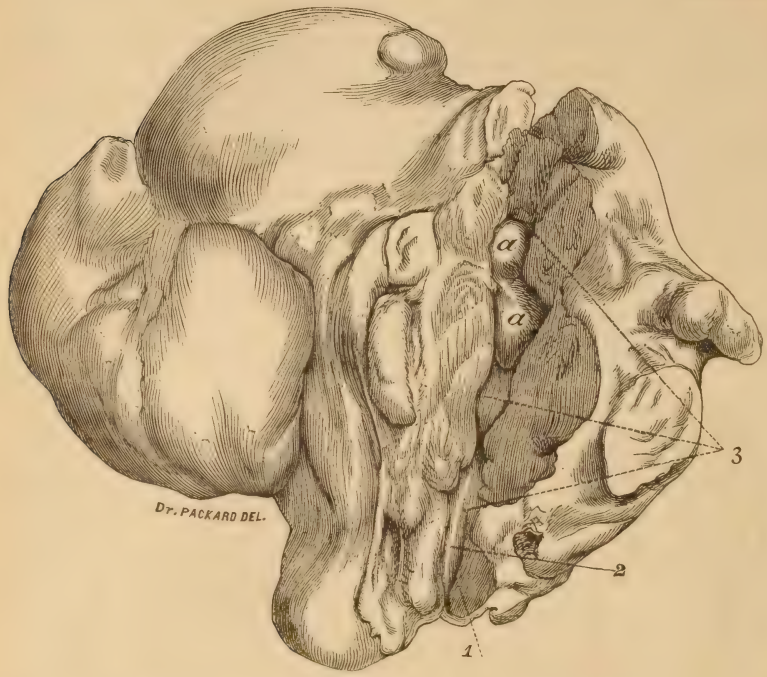
At five A. M. the day following, the respiration being slightly impeded, I was sent for and cleaned the tube which had some dry mucus adhering to its orifice. The patient then appeared to be doing well. At ten A. M. the tube was cleaned, neck dressed with a guard made of a rag spread with cerate, and a damp gauze put over the orifice of the tube. At one P. M., difficulty of breathing began, owing to mucus which clogged the bronchi, although it was occasionally ejected with false membrane through the tube. By afternoon the dyspnœa increased, and at a little before 6 P. M. she died asphyxiated, thirty hours after the operation.

A short time before death the tube was removed entirely, and frothy and viscid mucus continued to be ejected from the aperture in the trachea, which remained open.

*Fibro-nuclear Tumour of the Uterus.*—Dr. J. C. Morris exhibited a specimen of this, with the following history:—

This specimen was obtained from a colored woman, about thirty-five years old, unmarried. She had suffered for more than thirteen years with enlargement of the abdomen, and more than eight years since applied to Dr. Atlee with a view to the removal of the tumour if possible. Dr. A. recognized the character of the disease and advised non-interference; and she continued to live out as a servant, fulfilling her duties with but little inconvenience to herself, except that arising from the weight of the tumour and occasional attacks of "cramps." About five years ago she had an attack of inflammation in the tumour, which was successfully treated by Dr. Scholfield. But feeling desirous of some relief from the constant weight and shortness of breath which was becoming more embarrassing, she consulted me. I diagnosed a fibroid uterine tumour, and hearing she had been under Dr. Atlee's care, requested him to see her with me, which he very kindly did, on the 17th ult.; she was quite feeble, being just convalescent from an attack of the prevalent influenza, but bore the examination well. The next day, however, she had a pulse of 150, dry black tongue, and short insufficient respiration. Ordered for her neutral mixture with tr. verat. viridis gtt. ij, every three hours, under which her pulse sank to 120 by ten P. M., and the tongue became moist and lightly

furred. To my surprise, next morning she died at eight A. M. The *post-mortem* revealed no cause for death, except exhaustion and the me-



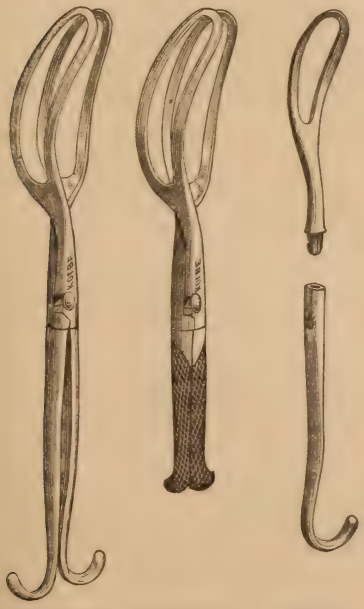

Anterior View of the Uterus; its Cavity laid open by a Vertical Section.—1. Os uteri; 2. Cervical canal; 3 Cavity of uterus greatly enlarged, and with fibroid tumors encroaching upon it at *a*, *a*.

chanical interference of the tumour with respiration. The peritoneum was not injected, nor was there any fluid, or fibrinous exudation in its cavity. On section through the tumour it was found to consist of the enlarged uterus, among the muscular bundles of the tissue of which were growths of a cartilaginous or scirrhous consistence and concentric structure—two of these bodies encroach upon and occupy the cavity of the uterus, which measures internally six inches from os to fundus. The concentric lamellated masses vary from half an inch to three and half inches in diameter, while an outgrowth from near the right corner extends like a huge auricle from the general mass of the tumour. Under the microscope I find the fusiform cells of fibro-plastic growths, and thickly imbedded among them, cells with double nuclei and large well-defined nucleoli.

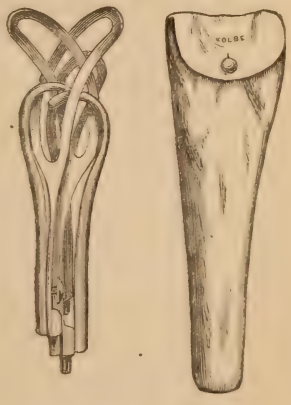
In conclusion, I may state that the mother of this patient suffered with a similar enlargement, as do her five sisters—one of whom, however, believes herself cured, as the tumour is no longer perceptible to herself; she is not under medical observation.

*April* 7. *Compact Portable Obstetric Case.*—Dr. A. H Smith exhibited a compact portable obstetric case, including long and short forceps, blunt hook and vectis, made at his suggestion by Mr. Kolbe, instrument-maker. The combination is made by means of a joint in the

handles of the long forceps, by which the instrument can be separated into two parts; one of the handles can then be joined to a vectis, and the instrument used either as a vectis or blunt hook. A separate pair of short handles is provided for cases where the short forceps would be preferable, as where no compression is desirable. The connection is made by means of a pivot and socket-joint about an inch below the lock, adjusting very firmly and readily by a spring catch, raised in separating them by means of a concealed lever upon the inside of the handle. The instrument is thus rendered more portable without in the slightest degree impairing its strength. The blades are of the Davis pattern, and the lock a simple button, proved by experience to be the safest and most readily adjustable of any in use. The long handles for compression permit an approach of the blades at their widest part of two and a quarter inches; the short handles for traction in ordinary cases, only two and three-quarter inches. . The jointed handle could be adapted to any pattern of blade desired. The whole set taken to pieces, can be put into a leather bag nine inches in length and two and half in width, as shown below.



Long forceps. Short forceps. Lever and blunt hook.



Instruments packed.

*On the Treatment of Carbuncle by Pressure.*—Dr. Ashhurst said:—

I wish to place on record the following cases, which tend to show that the treatment of carbuncle may be successfully conducted without either incisions or the use of caustics.

Case I.—Mrs. P., a German, 80 years old, was admitted to the Episcopal Hospital on Sept. 3d, 1864, suffering from two very large carbuncles on the back. Her extremely depressed condition, together with her advanced age, made me positively afraid to practise the usual crucial incisions which I had been accustomed to regard as necessary in such cases, lest the loss of blood, which, in carbuncles of such large size, would have

been profuse, and the shock of the operation might turn the scale against recovery, which, under any circumstances, appeared somewhat doubtful. I therefore concluded to use the pressure treatment, which had recently been advocated by Mr. Collis, of Dublin. This excellent surgeon makes pressure by means of a piece of soap plaster with a central aperture, simply applied to the carbuncle and daily renewed. Pretty much the same method was for many years employed by Mr. Flint, of the Stockport Infirmary, and described by him in the *Association Medical Journal* for July 15, 1853. The plan to which I resorted was slightly different. Taking strips (cut lengthwise) of ordinary adhesive plaster, I applied them concentrically, beginning well beyond the limits of the carbuncle and gradually covering it in, each layer overlapping its predecessor till the whole carbuncle, except about three-fourths of an inch square in the centre, was covered. Under this treatment the carbuncles rapidly diminished in size, the sloughing and suppuration being confined to the central area, and, as in the case of a strapped testicle, as the strapping became loose it was daily renewed. This patient was discharged, cured, after 35 days of treatment.

Case II.—James D., Irish, aged 32, admitted Jan. 6, 1868, with a large carbuncle at the back of the neck, of four days' duration. Treatment by pressure applied as in the last case, was begun the next day. The following measurements, which I took myself, will show the rapid diminution in size of the carbuncle.

| Date. | Size of Carbuncle. | Condition. |
|---|---|---|
| Jan. 8, 1868. | $5\frac{3}{4} \times 4$ inches. | |
| " 9, " | $5\frac{1}{4} \times 3\frac{1}{2}$ " | |
| " 10, " | $5 \times 3\frac{1}{2}$ " | Slough partly away. |
| " 11, " | $4\frac{1}{2} \times 3$ " | Slough all away. |
| " 15, " | $1\frac{1}{4} \times 1\frac{1}{4}$ " | Healthy ulcer. |

I have often been asked whether the treatment by pressure is not very painful: the patients on whom I have tried it have assured me that it is not, but that on the contrary the pain of the carbuncle is relieved by the firm support afforded.

I would add that I do not consider the application of pressure in this way a mere *placebo:* I believe that it not only tends to check the further extension of the carbuncular inflammation, but that it absolutely exercises a curative influence, by the mechanical support which it affords to the weakened tissues.

I believe that the good results obtained from the use of collodion in the hands of Seiche and others may be accounted for in the same way.

*On Certain Forms of Neuralgia accompanied with Muscular Spasms and Extravasations of Blood, and on Purpura as a Neurosis.*—Dr. S. Weir Mitchell read the following paper on these subjects:—

I have encountered from time to time certain forms of neuralgic suffering, which have appeared to me so unusual that I propose to myself the pleasure of calling the attention of the Fellows to their distinctive features. So far as I am aware the text-books and monographs contain no mention of any histories like those I shall relate first, but whether

they be really undescribed or not, little matters since they are certainly unfamiliar to most of us, and possess, as I think, an unusual interest.

In November, 1866, I saw, in consultation with Dr. Boardman, a lady (Mrs. P.) æt. 49, residing in the country in a healthy neighbourhood. Her family history showed entire freedom from scrofula or tubercle. She, herself, was a slight pallid person, of unusual intelligence, expressing in her features the signs of the great suffering she had undergone. Twenty-five years ago she had a severe labour with enormous losses of blood, and has ever since suffered from uterine hemorrhages, which are readily brought on by exercise or emotion, but usually come at the time of her periods, which are still regular. Within a year after her labour she began to complain of vulval pruritus with intense vaginismus and a free flow of leucorrhœal discharge. She is said by her former physician to have no uterine tumour, but as to this I cannot speak from personal knowledge, no examination having been allowed. Within ten years she has also had frequent rectal hemorrhage from piles. Besides these triple causes of weakness, she has habitual costiveness and atonic dyspepsia. It is therefore not surprising that the general result should have been a state of great anæmia and physical weakness. A very annoying complication was an intense burning of the tongue unaccompanied with ulcers or abrasions of that organ. Soon after the labour above mentioned she began to suffer from neuralgia of a very remarkable nature. It was general in character—affecting any part of the body, but chiefly the anterior face of the limbs and the sides of the neck. Of late it has been felt most in the groins and low down the back, over the sacrum or coccyx.

The first sign of attack was commonly pain, but more often she had a slight muscular twitching at or near the point about to suffer; and this lasted from one to seven days before there set in a violent boring or gnawing or sharp pain limited usually to a small space. This pain is described as atrociously severe; with it the muscular spasms increased and became, in rare instances, so violent as to distort the part; in the neck, for example, causing torticollis. It was therefore sometimes a mere twitching, at others, a strong and enduring cramp—the affected muscle being gathered into a hard knot.

Within a space of time, which varied from ten hours to seven days, there appeared at the point of pain a spot of extravasated blood, light in tint or deep black and having afterwards the usual history of a bruise.

Finally, as the pain and twitching abated, the skin in their near neighbourhood became exquisitely tender—being painful when touched ever so lightly; and thus, the attack ended leaving the spot to fade through the tints usual to every dermal blood stain.

When pain was present it was unfailingly attended at some time by the muscular phenomena, but of late the extravasations have only followed severe attacks, and at all times have been confined to the seat of the pain—usually over the point where this was worst or above the cramped or quivering portion of the muscle affected.

The number of the extravasations was controlled by the number of neuralgic sites; the size varied from a line to an inch or more in diameter.

Although familiar with most of the forms of neuralgic suffering, the case I have described was new to my experience. The character of the pain brought to mind the terrible neuralgia which is a common forerunner of locomotor ataxia, but there being in the present instance neither vesical nor oculo-motor or visual symptoms, and the case having

lasted twenty-five years without sign of incoördination in the legs, this idea could not be rationally entertained. Its history seemed to point it out as a case of neuralgia due to anæmic conditions, the result of the drains above mentioned; a diagnosis supported by the fact that any new hemorrhage was apt to bring on a fresh outbreak of neuralgia.

The patient who has been in my care from time to time, ever since, was placed under cod-liver oil and arsenic with lactate of iron. These were used persistently throughout the ensuing winter in varying quantities. Regular exercise, before almost abandoned, was resumed and gradually increased. Up to May, 1867, she had had but three hemorrhages and the neuralgia was lessened in frequency and severity, while at the same time the general gain in weight, strength, and colour was most satisfactory. Since then the patient has improved quite steadily; the tonics being varied from time to time, but those I have named having been longest employed. Last winter she continued to gain ground, and from May to November, 1868, she had comparatively little neuralgia. During the winter of 1868 and '69 up to date, she has had but three hemorrhages and one bad attack of pain. It affected the shoulder. The bruise marks are now but rare after the attacks, perhaps because these have ceased to be severe. The improvement in the local symptoms is equally well marked—the tongue no longer burns, and the pruritus is comparatively slight, so that considering the severity of the case, and the length of time it had lasted, the treatment may be regarded as successful. It certainly satisfied the patient most fully.

The other two cases which I have encountered vary in some respects from that which I have just stated.

The second case I describe from memory, having mislaid my notes.

A lady, æt. now about 55 years, was seized with general neuralgia, following unusual fatigue and exposure. A year later, at the age of 46, she began to be irregular, and lost within the next two years enormous amounts of blood. Meanwhile, despite every care and the best treatment, the neuralgia increased and began to assume the type described in the last case. She usually rose in the morning well and free from pain; within an hour after breakfast nearly every day, she was suddenly struck with a burning or gnawing pain somewhere in the legs or abdominal walls. The muscular twitching, at first confined to the neighbourhood of the pain, would then spread and assume the form of painful cramps, with jerking of the whole limb. The extravasation of blood was rarely larger than a quarter of an inch in width, but sometimes two or three spots formed at or near the site of pain, and frequently none were observed until she awakened next morning. The spasms rarely lasted all day, but night alone put an end to the pain, with which she finally fell asleep, to go through again next day the same course of torture. At the close of two years the catamenia ceased and the pain began to lessen; at the same time, however, she noticed that her walk had become uncertain and that the left foot dragged a little. Within eighteen months these symptoms increased so as to constitute a case of nearly complete paraplegia, whose growth was marked by the gradual and finally complete disappearance of all neuralgic troubles. At the same time, she lost by degrees control of the vesical sphincter, but had still when I saw her in June, 1868, some power over that of the rectum. There were no ocular symptoms. Sensation only began to suffer a year before my first visit, and at this time she could not localize impressions in either foot, or feel pain below the lower

half of either calf; while the muscles had become altogether insensible to electricity. The history therefore is not that of ataxia, but rather of general disease of the dorso-lumbar cord. My own opportunities of studying the case were limited to two visits, since when she passed out of my view. I understand, however, that the paralytic disease is now affecting her upper limbs.

Case III.—J. B., female, æt. 24 years, healthy, regular, and without inherited vice of constitution, applied to me in November, 1867, telling the following story: In July, while at the seashore, she had a fright, owing to an alarm of fire in the house where she was staying. It was followed by a prolonged hysterical condition, characterized by convulsions and cataleptic states. In September, she had typhoid fever, but not severely. It left her anæmic, for which she was taking iron rust in cider when I first saw her. Late in October, she began to suffer with neuralgia in the left ulnar nerve distribution. It first attacked the abductor region of the left little finger, coming on with violent spasm of that muscular mass, and finally there appeared over the seat of pain an irregular mark which she took to be an accidental bruise. When I saw her late in November, she had two or three such attacks every week, with usually small spots like those of purpura, and with nearly always some slight twitching of the nearer muscles. Both hands were affected, but the favourite site was the thenar or hypothenar eminence. At the time of her visit to me she had pain in the right forearm, with twitching of a few fibres of the common flexor of the fingers, which ceased when I forcibly extended these members. She called next day to show me an irregular extravasation a little below the point of greatest pain.

Her appetite was poor, her digestion wretched from excess of acid, and her bowels constipated. She menstruated regularly but not freely, and had slight leucorrhœa. The urine was loaded, when passed, with urates, but contained no albumen nor sugar. The spine was tender between the shoulders and at the sacro-iliac articulation.

Under treatment with the popular remedy known here as "Physick's lye," and pills of aloes and sulphate of iron, her acid dyspepsia grew speedily better, and her general health improving, the neuralgia lessened also. Within two months the extravasations and twitching were gone, and the pain so rare as to occur only once a week, or more seldom. In January, I gave up treating the stomach, which was free from excess of acid, and put her upon lactate of iron and arseniate of soda with cod-liver oil. Before the end of May, the neuralgia had entirely disappeared, and I ceased any longer to see her. The only local treatment, subcutaneous injections of atropia with morphia, I abandoned very early at her own request, owing to the horrible and persistent nausea which it induced.

The cases I have here described present the remarkable combination of a triple affection of sensation, motion, and nutrition. As to the relation between the two former, it is seen often enough in facial tic to excite no great wonder at its rare occurrence elsewhere. In Cases II. and III., the pain came first, or at the same time as the muscular twitching. In Case I., the latter symptom lasted often for a week before the pain came on; nor do I doubt that, during this interval of warning, a hypodermic injection of morphia would have prevented the pain from following.

The general explanation of these phenomena is easy enough up to a

certain point. The history and the results of treatment show, that they depended remotely upon anæmic conditions, but whether, allowing this, we presume the nearer cause to have been defective conditions of nerve nutrition, or the direct influence of a thinned and watery blood upon these nerve tissues, is not quite so readily determined.

A recent writer,[1] in the *Journal of Cutaneous Medicine* for October, 1867, in discussing herpes, and indeed the correlation of cutaneous exanthemata in general with neuralgia, reaches this conclusion: "Owing to the suspension of the regulating power exercised mainly by the sympathetic nerves over a given artery, effusion of fluid takes place from its ultimate ramifications. These being distributed to the skin, on the one hand, and to the texture of sensory nerves, on the other, the effusion so caused produces the herpetic rash in the former, and pain from mechanical pressure in the latter."

In the present cases we should have to regard the effusion as the common parent of pain, extravasation, and muscular spasm—which latter, however, was too remarkable in Case I. to be ascribed to an invisible effusion for a long time affecting muscle nerves only. We should remember also that in the familiar facial neuralgias we have first pain, and, at the close of the attack vaso-motor palsy, congestion, and lastly, effusion. The tic also, as a rule, accompanies the pain, or rather comes soon after it, most probably, therefore, in the present cases, the nerve first affected is that of sensation or motion, the common trunks no doubt suffering in some instances. While, however, we can easily see how pain and spasm may be caused, the explanation of coexistent leakage of blood is less easy. There may be, in limited skin spaces, local palsy of vessels so great as conceivably to lead to extravasation of blood. This would of course be a reflex affection of sympathetic vaso-motor fibres; but as to its probable efficiency in giving rise to the local blood loss I have some doubt. We see, indeed, so many instances every day of congestions which do not result, or only after a long time result, in vascular lesion and extravasations, that we are justified in asking further whether certain neural conditions may not be capable of directly enfeebling the vessel walls so as to cause them to give way under normal arterial pressures, or to permit of such relaxation as shall enable the globules to penetrate these parts in the manner pointed out by Waller, and more recently, by Cohnheim. There seems to be a good deal of evidence to show that when the exposed vessels of the open peritoneum are watched for several hours, such a permeation of the globules through the capillaries does sometimes occur. There still remains the unanswered question as to whether or how nerve lesions may be capable of aiding or hastening this result, or of injuriously interfering with the nutrition of minute vessels.

The second set of cases to which I desire to refer has been loosely classed under the vague general term of purpura. It is probable indeed that most of the forms of purpura have been rightly supposed to belong to an altered state of blood akin to that of scurvy, and productive of weakened vascular tissues and consequent bleeding, such as occurs in venom poisoning.

I am aware that pathologists are apt to regard these exudations of blood as directly due to some mysterious alteration of the blood itself—perhaps to the loss or degradation of the fibrinous element of this fluid. No

[1] Dr. Woakes.

doubt such a change may make more easy the leakage of blood, because coagulation is the natural method of corking a rupture in the vessels and thus whatever injures the clotting power of the blood will, of necessity, facilitate its outflow. In my own experiments on the hemorrhage from snake-bites, I have shown, however, that the contact of venom with the vessels occasions in a few minutes weakening of their walls and numerous ruptures, and this occurs throughout the body when the poison has been absorbed. Now, as the phenomena of certain exanthemata and fevers, yellow fever, especially, strangely resemble venom poisoning, and as the pathological appearances are also alike, we are justified, I think, in supposing that the immediate causes of extravasation are of similar nature in both or rather in all of these cases. In other words, extravasation in yellow fever and in snake-bite is due to weakened vessels, and not merely to a change in the blood, enabling it to escape through normal vessel walls. It remains to be settled whether, besides the enfeeblement and consequent breakage of vessels from such causes, there may not be possible, like nutritive changes from states of nerves. Atrophic alterations of the skin and nails have been shown by my colleagues and myself at the U. S. A. Hosp. for nervous diseases, to be common results of nerve injury, and I do not see why like alterations of vascular tissues may not also be occasioned by neural conditions. We should remember that some purpural eruptions are strictly local and take place now and then in persons who are vigorously healthy. In these it seems difficult to assign blood poisoning as a cause, and I think that I have seen cases in which the symptoms were such as to make us suspect that the eruptions might really be due to, or at least coincide with neural disease to such an extent as to authorize us to class them with neuroses, like those which are associated with herpes; the effusion of blood being in some way a consequence, or at least an accompaniment of the neuralgia.

Without desiring to commit myself fully to this theory, I shall simply relate two cases of purpura which appear to me to lend some weight to the opinion that certain rare forms of this disease may as justly be classed with the neuroses as are the ordinary instances of herpes.

Case I.—Miss C., æt. 32, originally of feeble constitution and for some years obstinately anæmic, liable to obscure uterine troubles and to occasional facial neuralgia. In December, 1867, after a fatiguing railway journey in a cold car, she was attacked the next day with violent pain in the calves of both legs, and especially in the insteps of the left foot. The pain was treated with local applications of chloroform liniment, and with the subcutaneous injection of the $\frac{1}{50}$ gr. of atrop. sulph., dissolved with $\frac{1}{4}$ gr. of morph. sulph. Before night the pain had passed away. The next day, in the afternoon, the pain returned, being slight on the right leg and very severe on the left instep, running down to the toes. The same treatment was used with apparent success. There was no fever and no pain elsewhere, the pulse being under ninety. Towards bedtime the feet flushed so as to be annoyingly hot. The next day the instep and outside of the left foot were covered with purpural blotches of small size, a few were seen on the front of the left leg and two or three only on the calves of both legs. The same order of phenomena with little variety was noted for several days, and finally yielded to large doses of quinia. Early this winter without assignable cause she had a return of the disease; on this occasion it lasted two weeks, returning daily between 3 and 5 P. M., and affecting both feet alike.

Case II.—Mrs. R., a healthy and even robust person, æt. 26, the mother of one child, æt. 4. In the end of April, 1868, this lady consulted me in regard to the following symptoms: Four days after a regular and correct menstrual flow was over she had a slight chilly feeling, and towards evening general aching of both legs with flush and tenderness of both feet. The second day the pain was chiefly in the feet, with darting and aching pain around the ankles. Exercise, as in the last case, increased both the pain and the local redness. Towards bedtime the heat increased without general fever, my thermometer marking $98\frac{1}{2}$ in the mouth and $99\frac{1}{2}$ on the inside of the ankle. During the night a purpural eruption appeared in both legs below the knee in front, and around the ankle and just above the toes. It consisted of spots varying from pin-head size to that of $\frac{1}{4}$ inch diameter. During a week the same phenomena appeared daily. Pain in the afternoon, tender, red and slightly swollen feet made worse by exercise, and finally purpural eruption in varying amount limited to the regions in which pain was felt. All of these symptoms faded away slowly after their week of full exhibition had passed. The purpural spots at the last were much larger, but as faint as the faintest bruise mark, and the vascular phenomena were easily brought back by the least exertion.

The treatment was addressed to relieving the pain by subcutaneous and other opiates, and quinia in 15 grain doses daily was given to meet the indication afforded by the periodicity of the attacks.

It certainly seems to me difficult to understand how cases such as these two, can be classed as other than neuroses. The local eruption if I may so call purpura, the pain also limited as to seat, the absence of signs of constitutional poisoning, all seem to put them outside of the scorbutic cases of purpura, while the general character of the attack apart from the petechiæ would, if the latter were absent, induce any one to say this is a neuralgic affection involving as cause or consequence the vaso-motor nerves. The sequence of symptoms is just that which occurs in herpes, and is probably to be explained very much in the same way as that curious affection. Whether the extravasations in my own and similar cases be due to a primary neuralgic disease of undetermined cause paralyzing the vaso-motor nerves or affecting the nutrition of the vessels, or whether the blood leakage occurs first, and by its presence in the nerve and muscle tissues accounts for the pain, we have no means of saying; but if we accept this latter view we are met by the difficulty that the subcutaneous stains appear in most cases after the pain and not before or with it. It would be a begging of the question to insist that intra-neural and muscular effusions precede those visible on the skin.

I am therefore disposed in this, as in the first set of cases, to conclude that the relation of the phenomena in time is that which externally it seems to be, the nerve malady coming first, the extravasation following it.

*May* 5. *Dislocation of both Bones of the Forearm forwards.*—Dr. Forbes reported the following case of this rare accident:—

It was stated by Petit that a dislocation of both bones of the forearm forwards could not take place without an accompanying fracture of the olecranon process of the ulna; and this assertion has been repeated by many authors in systematic works on surgery.

Malgaigne has, however, more recently collected six well-authenticated cases of this dislocation without fracture.

A blow upon the olecranon from behind, when the forearm was flexed upon the arm, seems in each case to have been the cause of the accident.

On the 10th of December I was called to see M. M., a boy about twelve years old. His accident had occurred but a short time previous to my arrival. He had been exercising himself in a gymnasium, and the proprietor who saw him at the time stated that while going up a ladder hand over hand he fell, striking, while falling, the back of his elbow "at the tip" against the margin of a table, the fall (which was only of about two feet) having taken place just as he had drawn his head near one round of the ladder which he held in the grasp of his right hand, and while in the act of extending the left hand to seize the round above.

On examination, the right forearm was found rigidly fixed at not quite a right angle with the arm. The arm was shortened and the forearm lengthened. The hand was supinated and the tendon of the biceps somewhat tense. The olecranon was discovered lodged distinctly in front of the humerus and above the lower margin of the trochlea, and the head of the radius separated from the capitellum by a depression in which the finger could be placed. The dislocation was complete.

While he was under the influence of ether I flexed the forearm on the arm, so as to disengage the posterior and upper margin of the olecranon from its position in front of the humerus, and while holding the arm firmly, both radius and ulna, being still strongly flexed, were brought downwards and backwards and the reduction was readily effected.

The general gonflement, tenderness, and discoloration of the entire extremity were excessive for some three weeks after the accident, and it was not until six weeks had elapsed that complete restoration of all the movements of the joint was accomplished, thus indicating how extensive must have been the laceration of the neighbouring parts.

Boyer, Velpeau, and Malgaigne have each recorded a case of this dislocation with fracture of the olecranon. In Boyer's case the man had fallen from a height; the olecranon could be felt drawn up between the condyles, while the coronoid process and radius were lifted up by the brachialis anticus and biceps above the condyles of the humerus. The dislocation was readily reduced but easily recurred. The patient died of other injuries, and the post-mortem examination revealed a fracture of the base of the olecranon extending obliquely downwards and backwards.

Velpeau's case was of eight years standing when he saw it; the olecranon was not united to the ulna by bone, the connection being ligamentous, as we often find between the fragments of a broken patella; the radius and ulna rested on the anterior surface of the humerus, yet the patient had a very useful limb.

*Dislocation of the Atlas upon the Axis.*—Dr. FORBES exhibited a specimen showing this lesion, and made the following remarks:—

The specimen which I hold in my hand was removed from the body of a man who committed suicide by hanging. Having tied a silk handkerchief around his neck and fastened the end of it to a small part of a gas-pipe projecting from the wall of his room, and which was not higher than his head, he had apparently jumped up, and having raised his feet at the same moment, the left side of his head had been brought forcibly against the wall and the dislocation thus produced. He was found suspended by the neck with his feet on the floor, dead. His nurse had been with him just fifteen minutes before, and had been sent to get some iced-water;

during his absence the patient accomplished his destruction. On his return with the iced-water, seeing the man suspended, the nurse seized him by the body and held him up, and called aloud for help. I heard him from a neighbouring room, and, running in, cut the handkerchief, the nurse still holding him up. Life was already extinct. On post-mortem examination this specimen was obtained: The odontoid process was still held in position by the transverse ligament, but the two check ligaments were found twisted around the top of the odontoid process, and the lateral displacement of the first vertebra was so great that the medulla spinalis was completely crushed. The inferior articulating facets of the first vertebra were entirely removed from the superior articulating facets of the second vertebra.

The case is an interesting one in a medico-legal point of view, the man having hung himself, yet his feet being found on the floor.

The rotary motion of the head is performed chiefly by the first vertebra moving on the second, and when this motion is forced beyond its limits the check ligaments may be either broken or twisted; if broken, and the chin at the same time elevated, there will be a displacement of the odontoid process by its either slipping under the transverse ligament or else rupturing it. Petit mentions the case of a child who was instantly killed by being lifted up by the head; the perpendicular impulse broke the check and accessory ligaments and allowed the odontoid process to slip under the transverse ligament without breaking it, the severe pressure of the dislocated process on the medulla spinalis causing immediate death.

Malgaigne records a case of rupture of only one of the check ligaments, which yet allowed a dislocation of the odontoid process beneath the transverse ligament without rupturing it; the circumstance of only one check ligament being broken prevented that degree of pressure on the medulla spinalis which would otherwise have caused instant death. The patient lived twenty hours.

*Case of Suicide by Hydrocyanic Acid.*—Dr. Shapleigh reported the following case:—

George S. Twitchell, Jr., aged 26 years, convicted of murder, was condemned to be executed on the 8th of April. At a quarter past five on the morning of that day he was found dead in his cell. The prison keeper saw him the night before at 12 o'clock, or a few minutes after, lying in bed as if asleep. At two o'clock he was in the same position. It is known that he was alive at half past eleven. Therefore it was probably near midnight when he died. At nine o'clock I was summoned to the prison and made an inspection. The body, dressed in the ordinary day clothes, with exception of coat and boots, was extended upon the bed in a state of perfect repose—the arms and hands semiflexed. There was no froth about the mouth, which was partly open. The eyes also, partly open, presented no "remarkable prominence or brilliancy," the corneæ were dry—pupils semi-dilated. The lips and nails were blue, and upon the under lip there was a brown stain which could not be washed off. The countenance was pale, slightly tinged of a lilac colour. The arms and legs were cold, but the body was still warm. Rigor mortis had commenced about the neck and shoulders, but the limbs were quite flaccid; there was not the slightest appearance of there having been a convulsion. The body exhaled no odour, not even from the mouth, nor could the

slightest smell of prussic acid be perceived in the cell or about any of the utensils. Beside and near the head of the bed there was a chair, upon which there was an empty tin cup. There is a window in the end of the cell; the air being colder on the outside, a constant draft sets in through the cell towards the corridor, where one of the watchmen was stationed. He noticed no unusual odour, nor did he hear any "death cry," heavy breathing, or noise of any kind. The cell had been searched, but no evidence of poison discovered. By request of the physicians of the prison the autopsy was postponed until half past three P. M. I was happy to avail myself of the opportunity to invite some of the well-known pathologists of our city to be present at the investigation. About fourteen hours after death, assisted by Dr. Butcher, resident physician, and in presence of Dr. Smith, visiting physician to the prison, Drs. Levis, Packard, Dyer, Adler, and others, I proceeded to make the post-mortem examination. The head was first examined; upon removing the calvaria the brain exhaled a strong and decided odour which satisfied every one present that death had been caused by hydrocyanic acid or one of its compounds. The brain weighed fifty-two ounces; it and its membranes were highly congested; beneath the tentorium there was a large quantity of serum—full two ounces. The lungs and liver were filled with blood; the heart was in a normal condition. The mucous membrane of the stomach was decidedly congested, and there was one spot of effused blood beneath the mucous coat. The small vessels were visible all over the coats of the intestines. Every part of the body upon dissection gave out the odour of the poison. The blood was dark and in a fluid state. A thin layer presented the peculiar blue or purple tint so often observed in cases of poisoning by hydrocyanic acid. Fully persuaded that something which had contained the poison must be concealed in the cell, Dr. Butcher and I commenced a systematic search, and soon found, hid in the toe of a boot, a half ounce vial half filled with a yellowish turbid fluid, smelling strongly of hydrocyanic acid. This fluid and the stomach with its contents, were submitted to Dr. John J. Reese for analysis. The fluid proved to be a solution of hydrocyanic acid; not a trace of the poison could be found in the stomach. Probably the deceased poured about two drachms of the poison into the tin cup, and then (having corked the vial, wrapped it in paper, and concealed it in the boot) drank the portion from the cup while lying on the bed. If the medicinal preparation was used, and it is reasonable to suppose that it was, since to obtain any stronger solution would be difficult if not impossible, he took about two and two-fifth grains of the anhydrous acid.

Dr. Packard stated that he had taken some of the blood in this case for examination. It remained fluid, and of the same bright colour as when first poured out from the vessels. Microscopically, the corpuscles were seen in rouleaux, scarcely a single isolated one being discoverable. The rouleaux were composed of larger numbers of corpuscles than those usually seen.

Dr. Shapleigh said further: In connection with the above case, an account of a suicide by cyanide of potassium, which I lately investigated, will not be uninteresting.

H. E., aged 23 years, had been much depressed in spirits for a few days. On the morning of the 10th of March last, he arose and was sitting on the side of the bed while his wife was dressing. She saw him unwrap a package and take therefrom a white substance the size of the

first joint of her thumb, which he conveyed to his mouth, crushed with his teeth and washed down with water from a basin. The paper dropped upon the floor, and he immediately fell back upon the bed breathing heavily. His wife suspecting that he had taken poison went in search of milk, which she obtained and tried to administer but failed, the jaws being rigidly contracted. By the advice of a neighbour she gathered up the poison, and ran for Dr. Krause, whose office was about half a square from the residence of the patient. The doctor discovering that the parcel contained cyanide of potassium, hurried to the scene. He found it impossible to relieve the man, who died soon after his arrival. About one drachm of the cyanide was taken. Death ensued in about twenty minutes.

The symptoms, as narrated by Dr. Krause, were dyspnœa, loud mucous rattle, insensibility, contraction of the jaw, and spasms of the extremities.

The post-mortem appearances were almost the same as in the first case narrated: the countenance was pale and composed; there was excessive turgescence of the vessels of the brain and its membranes, with serous effusion into the ventricles. The mucous membrane of the stomach was greatly congested, and there were numerous spots of effused blood; the lungs and liver were also congested; the right ventricle of the heart contained some dark blood, the left ventricle was empty. The blood was dark and fluid, and when in a thin layer, of a glimmering blue or a purple tint. Upon dissection every part of the body exhaled the odour of hydrocyanic acid.

*Case of supposed Strangulated Hernia; Operation; No Intestine found in the Sac; Recovery of the Patient.*—Dr. Walter F. Atlee reported the following case:—

J. D., aged 60 years, entered the St. Joseph's Hospital, April 21, 1869; he had suffered for about twelve years from a right inguinal hernia, which, according to his own statement, he had always been able to reduce perfectly without difficulty whenever it had protruded. A truss had always been worn in the daytime. Five days before, on account of sharp abdominal pains, he had taken a dose of oil, which operated freely; the night following, the truss was not put on, and the rupture descended into the right side of the scrotum, became larger and harder, and could not be pushed back as it always had been before. Since that period, five days, no evacuation of the bowels had been obtained, nor had the scrotal swelling diminished. This swelling was about as large as an ordinary fist, and of the usual shape of hernial protrusions. An attempt at reduction was made without success, and the man was ordered a warm bath, and put to bed with the scrotum maintained in an elevated position until the following day.

*April* 22. After consultation with my colleagues, and having again made an ineffectual effort, while the patient was under the influence of chloroform, to reduce the swelling into the abdominal cavity, the usual operation for the relief of strangulated inguinal hernia was performed. When sickened by the chloroform, a ventral hernia above the umbilicus was observed. When the sac was opened nothing was found therein but serous fluid and some gelatinous matter. The wound was covered by a cloth saturated with a mixture of oil and carbolic acid, and a dose of opium administered.

The following day the bowels were freely moved by the administration

of an injection. When questioned again in regard to his scrotal swelling, the man said that his rupture was always entirely reducible until about three months before, since when a portion of the rupture had always remained out, and growing larger and larger had finally become as large as a chicken's egg.

What was the precise pathological anatomy of the swelling upon which I operated in this case I am unable to say. The parts were examined sufficiently to enable us to be sure that no intestine was protruding into the inguinal canal, and that was all the search we thought justifiable. It was not a hydrocele of the cord, for the cord was behind the sac, nor was it a hydrocele of the tunica vaginalis, for the testicle was felt separate from it. It was probably, therefore, a case of dropsy of an old hernial sac; a rare affection of which some writers upon hernia make mention, but of which I know of no recorded case.

The patient who underwent this operation is doing well, and will have recovered from it in a few days.[1]

The case is reported as an instructive one, for had the state of affairs that really existed been at all suspected, an operation of the magnitude of the one practised would not have been performed. The sac could have been emptied by the introduction of a trocar, and then, if the symptoms of strangulation still persisted, more active measures could have been adopted.

[1] This patient has since left the hospital, entirely well.

# MEMOIR

OF

# ROBLEY DUNGLISON, M.D., LL.D.

READ BEFORE THE COLLEGE OF PHYSICIANS AT A SPECIAL MEETING HELD ON THE 20TH OF OCTOBER, 1869.

BY S. D. GROSS, M.D., LL.D.

"Qui omnium rerum atque artium rationem naturamque comprehenderit."—CICERO.

To write an appreciative and faithful biography of any man is confessedly a difficult task; but the embarrassment is vastly increased when, as in the present instance, the subject is an intensely earnest, self-reliant, highly-cultured, broad-minded, many-sided individual, who, for upwards of a third of a century, occupied a conspicuous place in professional and public esteem. Dr. Dunglison was no ordinary man; indeed, in more than one sense of the term, he was an illustrious man; a great scholar, an accomplished teacher, a profound physiologist, an acute thinker, a facile writer, a lucid, erudite, and abundant author. In all these relations he excelled, jutting out prominently above and beyond most of his contemporaries, both in the New World and in the Old, and forming, in the language of Fitz-Greene Halleck, in his poem of Marco Bozzaris,

"One of the few, the immortal names
That were not born to die."

There was hardly a respectable medical man in this country, during the last third of a century, that was not indebted to him, in a greater or less degree, for some of his professional information, derived either from his works or from his oral instruction. The number of pupils, taught by him in the different schools with which he was connected, was perhaps as great as that of any lecturer that ever lived. His signature is affixed to nearly five thousand diplomas. No physician on this continent has surpassed him in the extent of his erudition, in the variety of his information, or in the magnitude of his labors.

ROBLEY DUNGLISON was born on the 4th of January, 1798. His parents were William and Elizabeth Dunglison, the latter of whom was remarkable for her intellectual powers, and for the great care which she bestowed upon the education and moral training of her promising son. The place of his nativity was Keswick, a small town in Cumberland, England, on the south bank of the Greta, celebrated chiefly for its manufactures of linsey-

woolsey stuffs, cutlery, and black-lead pencils. The valley in which it is situated has long been distinguished for its beautiful lakes and picturesque scenery, and is the constant summer resort of thousands of tourists from all parts of the world. Greta Hall, for many years the residence of the poet Southey, is near the town, and serves to impart additional interest to the locality.

It was here, in this beautiful and romantic spot, so well calculated to inspire the mind with grand and noble ideas, that the boy received the rudiments of his education, and laid the foundation of his future usefulness and distinction. The original intention was to prepare him for the mercantile profession, and then to send him to the West Indies, to his uncle, Mr. Joseph Robley, an opulent planter, whose design it was to give him an interest in his estate. Before this plan, however, could be matured, his kinsman died; and, whether from his own natural proclivities or through the influence of his friends, he determined to study medicine. For this purpose he went to Green Row Academy, a celebrated classical institution, where he made himself thorough master of the Greek and Latin languages and of the higher branches of an English education. He had previously, while a pupil at Brisco Hill, near Wigton, in Cumberland, paid great attention to mathematics and English composition, and there are still extant several MS. volumes of his exercises which show with what care and neatness he performed his daily scholastic labours. No one can examine these exercises without being struck with the remarkable order and system which characterize them, and which formed such distinguished traits in his subsequent career. They were unquestionably innate qualities of his mind; and it is equally certain that to them much of his brilliant success, as an author and teacher, was due.

He commenced the study of medicine in his seventeenth year. His early pupilage was spent at his native town, in all likelihood as an apprentice to some obscure practitioner, whose name long since passed away. He afterwards went to London, where he served as an assistant to Mr. Charles T. Haden, the obstetrician, and personal friend of Sir Astley Cooper. During his connection with this gentleman, he attended a course of lectures in the University of Edinburgh; but returned at the close of the session to London, where, after having visited the École de Médecine of Paris, and received instruction in certain specialties, he completed his studies, and passed his examination at the Royal College of Surgeons and at the Society of Apothecaries. He commenced the practice of his profession in 1819. In 1824, he graduated, by examination, in the University of Erlangen, the subject of his thesis being Neuralgia. It was about this time that he determined to confine himself exclusively to medical and obstetrical practice, especially the latter, for which he seems, in his early youth, to have had a peculiar fondness. He was appointed physician-accoucheur to the Eastern Dispensary; and in May, 1824, announced a course of lectures on practical midwifery for the following autumn. Before the time, however, arrived, a circumstance occurred which completely changed, not only his plans as a metropolitan teacher, but the tenor of his whole future life. The immediate cause of this occurrence was an invitation from Thomas Jefferson, ex-President of the United States, the founder of the University of Virginia, to one of the chairs in its medical department. It is well known that most of the original members of the different faculties in the new institution were foreigners, selected, at the request of the Board of Visitors, by Francis Walker

Gilmer, Esq., who was sent to England for this express purpose. Of all the appointments that were thus made none proved eventually so advantageous to the country as that of Dr. Dunglison; and it reflects no little credit upon the sagacity of the agent of the University that his choice fell upon a mere youth, hardly twenty-six years of age, who, however, had already given great promise of distinction by the publication of a monograph on the "Stomach and Bowel Complaints of Children," and by various contributions to the periodical press, as well as by the display of extraordinary energy and unbounded ambition.

Dr. Dunglison left London with his family on the 27th of October, 1824, for the United States; but, owing to adverse winds and tides, he was detained six weeks in the British Channel, and did not reach Charlottesville until near the middle of the following February, a period almost of three months. During this protracted voyage, unusually long even at that day for a sailing vessel to cross the Atlantic, he lost no time in preparing himself more fully, by a course of reading, writing and reflection, for his approaching labours in his new field of duty.

It had been covenanted with him, prior to his departure from Europe, to teach in the University of Virginia anatomy, physiology, surgery, materia medica, pharmacy, and the history of medicine; a task which could only be performed by a man of extraordinary ability, industry, and attainments, and which carries one back to the days of Nathan Smith, who, for many years, taught nearly all the branches of medicine at Yale and Dartmouth Colleges. It was, in truth, a Herculean task, much too varied, extensive, and onerous for any man, however learned or industrious. That Prof. Dunglison did it all the justice which it was possible for any human being to bestow upon it, it is safe to assert, from what is known of his character for honesty and fidelity, and of the reputation which he earned during his connection with the University as a successful and popular teacher.

Young as he was when he left his home in the Old World, deep and heartfelt regret was expressed at his departure, not only by his professional friends and admirers, but by the London Medical and Hunterian Societies, of which he was at the time the foreign secretary, and which complimented him by the passage of a series of resolutions, full of sympathy and cordial good wishes.

His residence at the University of Virginia extended over a period of nine years, during which he not only delivered, with never-failing punctuality, his various courses of lectures, but laid the foundation of a solid and enduring reputation as a great author. His industry was boundless. The first fruits of his labours were, his Human Physiology in two portly octavo volumes, and his well-known Medical Dictionary. The composition of these works, doubtless greatly facilitated by the conveniences afforded by the splendid library of the University, rich in the medical lore of ancient and contemporary literature, was a wonderful achievement for one so young. The motto of his Physiology, adopted from Haller, showed the purpose of the author, although the scope of the work reached far beyond its meaning: "Vastissimi studii primas quasi lineas circumscripsi." His home at Charlottesville was, in every respect, a most charming one, graced by all the elegancies that can adorn private life—a refined and highly cultivated circle of friends, mostly members of the different professorial staffs of the University; a refined and luxurious ease, even in the midst of the most arduous labours, and

the society of books and periodicals, which always lay scattered in profusion upon his tables, and served, along with music and conversation, to beguile his leisure moments. He became the intimate friend and professional adviser of the "Sage of Monticello," and of James Madison, to the latter of whom he dedicated his Human Physiology, and whom he attended in his last illness, in 1836, having been expressly summoned from Baltimore, where he then resided, the venerable ex-President refusing to take any medicine unless prescribed or sanctioned by him. A number of interesting mementos, the result of this genial intercourse, are still preserved in the family.

In 1833, he accepted the chair of Materia Medica, Therapeutics, Hygiene, and Medical Jurisprudence in the University of Maryland; and accordingly, in the autumn of that year, he transferred his residence to Baltimore. Although he was surrounded by every comfort, and had troops of friends and admirers at Charlottesville, he had long panted for a larger field for the exercise of his powers as a medical teacher. He was like one whose talents were hidden under a bushel. The medical department of the University of Virginia was then, as it is now, an elementary school, with no material advantages except the learning, the fidelity, and the indomitable industry of its professors. It is, unquestionably, the best rudimentary institution of the kind on this continent; but it is, unfortunately, like all kindred inland seminaries, destitute of anatomical and clinical facilities, justly considered as of such paramount importance in a course of collegiate education in this and other countries. These considerations could not fail to have their influence with a man so ambitious as Dr. Dunglison. His reception at his new home was all that could have been desired, and he entered upon his new labours with increased life and alacrity. The session opened with a respectable class of students, with whom, as with his colleagues, he soon, as usual, became a great favourite. He remained at Baltimore, however, only three years, but they were years of great industry and of augmenting fame.

During this time he composed his work on General Therapeutics, the title of which was afterwards changed to General Therapeutics and Materia Medica, and his Elements of Hygiene; brought out a new and much enlarged edition of his Human Physiology, and contributed various papers to the medical press. In addition to all his labours as a lecturer and a writer, he had charge, for a part of every year, of the medical wards of the Baltimore Infirmary, an institution under the immediate supervision of the Medical Faculty of the University of Maryland; and attended to more or less private practice, chiefly in consultation in obscure cases. His residence in Baltimore was eminently pleasant; for long before he left it he had drawn around him a delightful and genial coterie of friends, who deeply regretted his removal. The number of students in the University had materially increased during his connection with it.

In June, 1836, he was appointed Professor of the Institutes of Medicine in the Jefferson Medical College of Philadelphia, a chair expressly created for him; and he left Baltimore in the following September, filled with bright anticipations of further usefulness and renown in his new home. Owing, however, to various causes, over which he had no control, and which it is unnecessary here to specify, the school did not flourish to the extent that had been prognosticated, and it was therefore reorganized in the spring of 1841, the change being so thorough as to amount almost to a complete revolution, inasmuch as only three of the original faculty—

Dunglison, Huston, and Pancoast—were retained. The College now entered upon a career of prosperity and reputation unequalled in the annals of medical teaching. At the outbreak of the war six hundred and thirty students, the largest class ever assembled on this continent, graced its ample halls. Dr. Dunglison remained at his post, steadily and faithfully working for the interests of the school, until the spring of 1868, when ill health compelled him to vacate the chair which he had so long and so worthily occupied. The Trustees, in accepting his resignation, immediately conferred upon him the well-merited title of Emeritus Professor, and accompanied the announcement with a letter expressive of their deep regret at the necessity which had led to his withdrawal from the Institution.

Dr. Dunglison was one of the most copious writers of his day in this country. To some of his productions allusion has already been made. While yet a mere youth he published his "Commentaries on the Diseases of the Stomach and Bowels of Children," a small octavo volume, which, although it never reached a second edition, was quoted in a complimentary manner only a short time before the death of its author, thus showing that it must have possessed considerable, if not marked, merit. He had translated Baron Larrey's Memoir on the Moxa, and Magendie's Formulary of New Remedies, edited Hooper's Surgical Vade-Mecum, and contributed largely to various periodicals, medical, literary, and scientific. During the early part of his residence in this city other works followed in rapid succession. In 1837 appeared the "Medical Student," or Aids to the Study of Medicine, of which a new edition, much enlarged, was issued in 1844. His "New Remedies" was published in 1839, originally in the American Medical Library, and subsequently in a separate form. It ran through seven editions, the last having left the press in 1856, as an octavo of 750 closely-printed pages. The "Practice of Medicine" was issued in 1842, in two volumes. It passed through three editions, the last of which, six years after, attained the size of nearly 1500 pages. The next work was a Dictionary for the Blind, in raised type, on the basis of Worcester's English Dictionary, in three huge folio volumes, the joint production of himself and Mr. W. Chapin, Principal of the Blind Asylum of Philadelphia. In 1837 he established the American Medical Library and Intelligencer, a monthly periodical devoted to the republication of foreign medical and surgical works, and the dissemination of medical news. It was discontinued in 1842. The portion contributed by him, as editor and collator, comprised five volumes. In addition to all this vast labour, he edited, with notes and valuable additions, Roget's Physiology, Traill's Lectures on Medical Jurisprudence, and Forbes's Cyclopedia of Practical Medicine, the latter in four large octavo volumes, thoroughly revised and brought down to the existing state of the science. He published numerous addresses, introductory and valedictory, delivered before his classes; appeals to the people of Pennsylvania on the subject of an asylum for the insane poor; views on cleansing the city of Philadelphia in cholera times; letters on the blind in Europe; and biographical notices of Peter S. Duponceau, Prof. Tucker, Judge Kane, and Rev. Dr. Bethune, besides numerous other papers which it is needless to mention.

The first contribution he ever published was an article in the London Monthly Magazine for 1817, on a Floating Island in Derwentwater Lake, Cumberland. This was followed by a paper, in the same journal, on the Wind of a Ball, one on Anthropophagi, and one on Collectanea Dietetica,

under the signature of "Philos." In 1822, he published in the Annals of Philosophy an article on the Phenomena of Vision produced by dilating the Pupil by Belladonna; and in the following year, in the London Quarterly, an elaborate paper on Malaria. During his residence at the University of Virginia he published, conjointly with George Long, Esq., "An Introduction to the Study of Grecian and Roman Geography."

He was one of the founders and editors of the Virginia Literary Museum and Journal of Belles-Lettres, Arts, and Sciences, a weekly periodical, issued at Charlottesville, in the interest of the University. Although it was conducted with marked ability, and had many readers, it was suspended at the end of the first year for the want, it would seem, of proper aid from the contributors. Dr. Dunglison furnished many of the leading and more elaborate articles, the material thus supplied amounting to several hundred pages. Most of the articles were of a non-professional character, and displayed unusual learning and research—as Fashions in Dress in England at the commencement of the Seventeenth Century; Onomatopœia; Modern Improved System of Road-making; Certain Ceremonies connected with the Dead; Anthropology; Blondel and Richard Lion-Heart; English Provincialisms; Penitentiary Discipline; Universities; Legends of the English Lakes; Superstition; Americanisms; Early German Poetry; Etymological History; Sanscrit Language; Ancient and Modern Gymnasia; Cradle of Mankind; English Orthoepy; Canals of the Ancients, and Jeffersoniana. Quite a number of these papers were of an exhaustive character.

This catalogue of his literary labours, which might, if space permitted, be much extended, shows that Dr. Dunglison was not only a very copious writer, but a writer upon a great variety of subjects, both professional and miscellaneous. "Occasionally," says one of the most charming of modern authors, "the life of the intellect seems to run itself out in one effort. All the fine juice of the vine flows into a single grape." It was not thus with Dunglison. Few men have been more gifted in this respect than he was. He wrote with immense rapidity, literally as if his pen had been impelled by steam. It was nothing for him, in his riper years, to dash off from ten to fifteen pages of printed matter of a morning. It is reported of the late Mr. Raymond, of the New York Times, that he often wrote a dozen columns for that paper at a single sitting; and our great medical scholar frequently accomplished similar exploits. There was, however, this noteworthy difference between the two men that, while the pen of the one ran smoothly and uninterruptedly over his paper, that of the other was constantly arrested by the necessity of marginal references; a labour which greatly impedes a writer's progress, and of which a public journalist is, in great degree, if not wholly, ignorant.

Dunglison wrote not only rapidly but well, possessing singular facility of diction and power of utterance. His style was clear and classical, the construction of his sentences harmonious, the arrangement of his matter orderly and systematic. Always perfect master of his subject, and thoroughly versed in the art of composition, it was no labour for him to adapt his language to the comprehension of the dullest intellect.

It has been said that he was a mere compiler of other men's thoughts and language, and that such books as he produced might have been written by any one, even much less learned and industrious than himself. I cannot share this opinion. Originality is many-sided, and may exhibit itself in a great variety of ways. Thus, for instance, a man may confine

himself entirely to experimental investigations, and so reach results previously unknown, or at least very imperfectly ascertained; or he may make himself master of facts long recognized and accredited, the property of the world, or of a particular sect, class, or individual, and be quite original in the manner in which he arranges, groups, or presents them to his reader, and in the significance which he attaches to them. Facts long known may be differently interpreted, or applied to new purposes, and so assume an original character. Steam was known from the earliest ages, but the fact that it is capable of propelling an engine, and thus completely changing the aspect of navigation, commerce, manufactures, and human intercourse, was first distinctly demonstrated by Watt and Fulton less than three-quarters of a century ago. The author of any work, exhaustive of the subject of which it treats, must, to a great extent, from the very nature of the case, be a compiler; that is, he must avail himself of what is known, and he must so elaborate his material as to exhibit it in the most advantageous light. A system, as remarked by the great Lexicographer, must necessarily be built upon the labours and discoveries of many minds. It is thus with the physiologist, the physician, and the surgeon, not less than with the historian and the scientist. Hume, Gibbon, Macaulay, Milman, Bancroft, Motley, and a hundred others are all compilers, as it respects their facts, and original only in regard to their interpretation and appreciation. Captious critics, in reading the works of Dunglison, give him no credit for his erudition and his honesty. They see in his marginal references an evidence, as they suppose, not of his desire to acknowledge his indebtedness to the more important sources from which he derived assistance, but a demonstration that he was simply a copyist of the products of other men's brains. His writings everywhere bear the impress of a strong, vigorous, and discriminative intellectuality, a potential masculinity, utterly incompatible with such a narrow-minded conclusion. There is in all his works, especially in his luminous treatise on Physiology, a strong infusion of the dignity of self-respect, and of that independence in the expression of opinions so characteristic of a great author. It has been well remarked by a sagacious and voluminous writer, Sir Egerton Brydges, "that he who sets things in a light in which they have not been set before, adds to human knowledge."

It is a well-known, and, at the same time, a melancholy fact that most professional works, however able or learned, have a very ephemeral existence. Few survive their authors, especially if the authors themselves attain to anything like a respectable age, and many die out almost before the printer's ink is fairly dried upon their pages. Like the sickly fruit of summer, which drops off prematurely, and is unfit for use, they fall still-born from the press; or, if read at all, are soon laid ignominiously upon the shelf, to be consulted only at long intervals in the hope, perhaps, of extracting from them the little kernel from the thick shell that incloses it. Popular as most of Dr. Dunglison's works have been, they have not been exempt from the general fate of such productions. At least three of them, long and extensively employed as text-books in the schools of this country, rest from their labours. Not one of them will ever be reproduced, and yet, as they respectively reflect the existing state of the sciences at the period at which they flourished, they will often be referred to by the learned and the curious, interested in watching the progress of the healing art. The Human Physiology, which passed altogether through eight editions, the last in 1856, is an imperishable work,

to which physiologists, in all time to come, will appeal for an account, at once full and reliable, of the facts, true and spurious, which marked the state of the science during the lifetime of its illustrious author. It will be the mile-stone in after ages in regard to the history of the physiological science of the nineteenth century that the great work of Albert von Haller is in regard to that of the eighteenth. I know of no treatises which, in point of systematic arrangement, minuteness of detail, scrupulous accuracy, clearness of style and just criticism, are at all comparable to these productions, both destined to stand as beacon-lights in the World's Great Library. The Dictionary, Dunglison's other great work, under the supervision of a judicious editor, will maintain its place, as a book of daily reference, for an indefinite time. Such a labour, as its composition implies, will probably never again be attempted by any single writer, however learned, patient, or industrious. It is worthy of notice that Dr. Worcester, in his great American Dictionary of the English language, gives Dr. Dunglison as an authority whenever a medical term is employed, a compliment gracefully acknowledged in the preface of the work. Dr. Webster also frequently quotes him.

His Elements of Hygiene was, like the Physiology, a pioneer work. Until its publication, in 1835, no comprehensive and exhaustive treatise had appeared upon the subject in the English language. The department of hygiene was introduced into the University of Maryland, as a part of the duties of the chair of Materia Medica and Therapeutics, which he then held in that Institution. At the time when the work appeared, the subject of hygiene had never been systematically taught in our schools, and even now, after the lapse of a third of a century, it is most shamefully and unaccountably neglected. In France, since the days of the illustrious Hallé, it has been a branch of the regular course of instruction in all the medical colleges, as well as in those of Germany and Italy.

It is difficult, so soon after the death of Dr. Dunglison, to form anything like an accurate estimate of the influence of his writings upon his own and upon succeeding ages. Considering them as a whole, it is safe to assert that his works were more widely disseminated and more extensively read than those of any medical man in the present century. The Physiology passed through eight, the Practice of Medicine through three, the Materia Medica through six, the New Remedies through seven, the Hygiene through two, and the Dictionary through more than twenty editions; of the latter work alone, over fifty thousand copies have been sold. Their sale, in fact, was immense, and they were distributed, far and wide, through the length and breadth of the country, thus assisting in conveying information and moulding the opinions and practice of all classes of physicians. The Dictionary has always had numerous readers in Great Britain, and the only surprise is that it has never been translated into some of the more important languages of Europe, as it is incomparably superior to any work of the kind ever produced on the other side of the Atlantic.

He commenced his career as an author in the infancy of American medical literature. The works of Thacher, Wistar, Coxe, Dorsey, Chapman, Beck, Dewees, Eberle, were the only native systematic productions, of any note, that had yet appeared. Our students had relied for their text-books, for the most part, upon foreign reprints, in nearly every branch of medical education. When the Human Physiology appeared,

the only treatise upon the subject in the English language was that of Dr. Bostock, a system full of errors and imperfections, which was at once replaced by its more elaborate, accurate and philosophical rival. Hooper's Dictionary, so long the popular lexicon of the American student, was speedily thrown aside after the publication of the "Dictionary of Medical Science." His other works, as already stated, had a wide circulation. The one entitled New Remedies filled an important void in medical literature, and, by successive editions, became a volume of immense labour and erudition, thoroughly reflecting the rapid strides of the Materia Medica during the last thirty years.

It will thus be perceived that Dunglison came upon the active stage of life at a most opportune period; at a period when there was an urgent need of just such a man, of a man who, by his ample learning, his refined scholarship, and his untiring industry, could enrich and ennoble medical literature, and thus diffuse a taste for literary pursuits, until then little cultivated on this side of the Atlantic.

As a lecturer and a teacher he enjoyed a world-wide reputation. Few physicians visited Philadelphia without making it a special object to hear him. "When does Dunglison lecture?" was the common inquiry of the stranger on his arrival in the city. He was remarkable for his fluency, the choice of his language, his mellifluous voice, the ease and grace of his manner. It was the possession of these qualities, superadded to a thorough mastery of the subject of his discourse, that rendered him such an attractive teacher, and caused him to be sought for, far and wide, as a professor in different American medical schools. Such were his fluency, and his wonderful command of language, that it was often said of him that he lectured as if he had been wound up, although no one ever accused him of being a mere machine. His great animation, his vivacity, his bonhommie, his captivating manner, discountenanced such a conclusion, and impressed the hearer with the conviction that he sat in the presence of an extraordinary man, decidedly the most able and popular teacher of physiology of his day in this country. If he had any fault as a lecturer, it was that he spoke too much in a monotone, and that he did not make enough points, as he proceeded from topic to topic, an expression which all teachers know how to appreciate. He never failed to enchain the attention of his class. As a disciplinarian he was a perfect model. There was no whispering, no lounging, no disorderly conduct in his room; every student was in his place, and the hour always passed rapidly and pleasantly, every one feeling how much he had been instructed and edified by the discourse. He was proud of his position as a professor. He loved to appear before his pupils, and to unfold before them the treasures of his knowledge. "What," asked a pupil of his master, Thales—"What recompense can I make to show my gratitude to you for your excellent lessons?" "Teach others," was the philosopher's reply. Many of Dunglison's pupils occupy high positions as professors in our medical schools.

It is a remarkable fact, as he himself repeatedly informed me, that, long as he had lectured, he never went before his class without a certain amount of preparation. Not less than two hours were generally spent in this manner. No man could have been more faithful or more conscientious in this respect than he was. To be thoroughly prepared, and up to the level of his department, was with him a matter not only of pride but of solemn duty. None of his lectures, save that on Death, the last of his

course, were written. A few heads, denotive of the more prominent topics of what he purposed to discuss, was all he required during the hour.

Dr. Dunglison never had recourse to vivisections as a means of illustrating his physiological prelections in the presence of his class, so fashionable in some of the schools in this and other countries, especially continental Europe. He had witnessed so many of these disgusting and revolting experiments during his sojourn, as a student, at Paris, in the hands of Magendie and Orfila, that he had contracted a positive aversion to them; and, although he readily acknowledged their value when performed with a view of clearing up some new or obscure point in his favourite branch of study, his sensitive nature shrank so entirely from the infliction of pain upon the dumb, helpless creatures usually selected for the purpose, that he rarely engaged in such exercises even in his younger days. I often invited him to the operations at my clinics, but he could never be induced to be present, evidently dreading the cries and excitement of the poor patients. Like his illustrious prototype, Albert Von Haller, he could not bear the sight of blood.

The case of Alexis St. Martin, in whose stomach there existed a fistulous opening, the result of a gunshot injury, greatly excited his curiosity, and he not only actively assisted in but suggested many of the experiments performed upon that celebrated person by Dr. Beaumont with the view of elucidating the process of digestion, and of ascertaining the digestibility of different articles of food.

As a physician, thoroughly versed in the minute and intricate details of the routinist, it is difficult to form a correct estimate of him. He was too much of a closet man, too much shut up in his library, and too much given to authorship, to be a great practitioner. He was a medical philosopher, a savant, rather than a physician. A large practice would have been irksome to him; it would have interfered too much with his studies, and he was naturally too sensitive to encounter its responsibilities. At the bedside, however, where it was my good fortune occasionally to meet him, he was always most judicious, ready in diagnosis, and prompt and decided in his therapeutic resources. He had no respect for, or faith in, the heroic; he believed in the powers of nature, and considered it his duty to aid her efforts at cure when she was in distress. He despised meddlesome medication, and was unsparing in his denunciation of it. It has been said, again and again, by his pupils and intimate friends, that he was a skeptic; that he had no confidence in the healing art; that practice was a blind and uncertain art, a matter simply of chance and luck. I do not think that such a view fairly represents the facts of the case. If he gave little medicine, and thus lent currency to the idea that he was an unbeliever in its efficacy, it was because of the great evils which he had witnessed from the exhibition of large and frequently-repeated doses, so much in vogue during the early part of his professional life, and so well calculated to disgust a man of a rational and philosphical mind. During his residence in London, and at the University of Virginia, he had little opportunity of acquiring practice. In Baltimore, although he was one of the professional attendants of the Infirmary of that name, his patients were, like angels' visits, few and far between. And the same was true of Philadelphia, where he spent the greater portion of his riper years. He was for a time connected with the Philadelphia Hospital, the duties of which he discharged with signal fidelity and punctuality. As a clinical

teacher at the Jefferson Medical College, an office which he held for a number of years, he was always eminently happy in the examination and diagnosis of his cases, but rarely prescribed much medicine, trusting rather to the powers of Nature than to his own efforts in controlling morbid action.

As a scholar, using that term in its more exalted sense, he was without a rival in the medical profession of the United States. Indeed, it is questionable whether he had any superior anywhere. His classical attainments were profound: he read Greek and Latin as easily as English. His knowledge of modern languages, especially of the French, Italian, and German, was extensive, and was of immeasurable service to him in the composition of his numerous works, every one of which, with the exception of the Commentaries on the Diseases of the Stomach and Bowels of Children, bears the impress of vast research and profound erudition. It is difficult fully to realize the extent and variety of his knowledge. "Nihil quod tetigit non ornavit." Ages will elapse before our profession will produce another member so learned and, in all respects, so accomplished as Dr. Dunglison. The only man abroad at all comparable to him in scholarship and medical attainments, is Dr. James Copland, author of the Dictionary of Medicine, a work of stupendous labour and research, with whose literary pursuits, if he had remained in Europe, Dunglison would have become associated, arrangements having already been entered into to that effect prior to his departure to America. Francis Adams, the translator of Hippocrates and of Paul of Ægineta, probably had a more profound acquaintance with Greek and Latin than either, but in variety and extent of knowledge he was greatly their inferior.

As a journalist and a reviewer, a position which he occupied for six years, he was analytical rather than critical, learned rather than controversial. Assailed by his opponents, he knew how to direct his pen without steeping it in bitterness. He never forgot the courtesy due the editorial tripod.

If we descend to his private life, it will be found that Dr. Dunglison was a delightful companion, a fond and loving husband, a devoted father, a faithful citizen, true to the best interest of his adopted country, with a warm sympathy for the oppressed of all nations. He adorned the domestic circle, and imparted a healthful charm to all who came within his influence. Born to grace society, he was the idol of his home, and the cherished object of attention wherever business or pleasure called him. His conversational powers were of a very high order; he possessed great general information, and there was no subject, professional or non-professional, upon which he could not talk intelligently, if not exhaustively. He had a remarkable fund of anecdotes, and often interspersed his remarks with an apt quotation from the classics, agreeing with Dr. Johnson that it was a good thing, inasmuch as there is a community of mind in it, and that it is the parole of literary men all over the world. Although an Englishman by birth, he loved his adopted country with all the ardour of a genuine patriot, and rejoiced in every measure designed to advance its welfare and prosperity. As a medical teacher, engaged in the active exercise of his professional duties for upwards of forty years, he had an opportunity of studying the imperfections of our systems of medical education, and would gladly have afforded his aid in remedying them, if it had been possible to obtain the general co-operation of the

schools; without which, as every one acquainted with the subject knows, all efforts of the kind must prove unavailing.

Dr. Dunglison never took any active part in politics, although he seldom, if ever, omitted to vote on election-day, generally for the men whom he supposed to be the best qualified to fill the offices for which they were candidates, irrespective of party bias, prejudice, or influence. He had, like most right-thinking men, a contempt for physicians who dabble in politics, and make themselves noisy and conspicuous on the stump.

He was for nearly thirty years connected with the Institution for the Blind in this city, having for a considerable period served as Vice-President of the Board of Managers and Chairman of the Committee of Instruction. No one, probably, ever took a more active part than he in promoting the welfare and happiness of its inmates, who were all warmly attached to him, not a few looking upon him in the light of a devoted father. It was for them, more especially, that he prepared, jointly with Mr. Chapin, the Dictionary with raised letters already referred to. He loved to scatter flowers around their family altar, to ask them questions, and to give them advice in regard to their health, education, and mental improvement. One of his greatest regrets, during his last cruel illness, was that he could no longer visit the Institution; regrets somewhat mitigated by the frequent and anxious inquiries which the children made at his own door, respecting his condition, during that long and sad period.

The poor insane, too, engaged his especial sympathy and attention; and, as already stated, he made several appeals in their behalf to the people of Pennsylvania, pointing out the importance of providing them with better homes, and a more rational and philosophical mode of management than then existed.

His world-wide reputation secured him many testimonials—altogether about one hundred—of respect and esteem from medical, literary and scientific associations and institutions, both at home and abroad. Some of these were showered upon him before he left Europe, thus showing the regard in which he was held by his professional brethren even at that early age. Yale College, in 1825, conferred upon him the degree of M. D.; and in 1852 he received that of LL.D. from Jefferson College at Cannonsburg, Pennsylvania, a similar degree being bestowed upon him nearly at the same time by the Jefferson Medical College of this city. He was Vice-President of the American Philosophical Society, Vice-President of the Training School for Idiots, President of the Musical Fund Society, Vice-President of the Institution for the Blind, Chairman of the Faculty of the University of Virginia, and for a number of years Dean of the Faculty of the Jefferson Medical College.

He enjoyed the acquaintance and friendship of many of the most distinguished medical men at home and abroad; and the correspondence growing out of these relations would, if published, fill several large volumes. Few important appointments occurred in the medical schools of this country concerning which his opinion was not solicited, such was the confidence reposed in his judgment and honesty.

Dr. Dunglison died at his residence in this city on the 1st of April last, at the age of seventy-one years. He fell "like as a shock of corn fully ripe in his season." His health for some years past had been slowly but surely declining. He had long suffered from attacks of gout, which had latterly, in a great degree, disabled him from active exercise.

In the winter of 1866 and '67, he was almost constantly obliged, by his increasing infirmities, to ride to and from the College, although the distance from his house was only a few squares, so difficult and painful was it for him to walk. After, however, the labours of the session were over, he rallied considerably, passed the vacation in comparative comfort, and was able to discharge with his accustomed ability the duties of his two offices of professor and dean during the following winter. It was truly marvellous how, amidst the ravages of disease, racked with pains and dyspnœa from valvular obstruction of the heart, he held out so long and so manfully. I listened to his last lecture, rendered doubly sad by the fact that it was upon death—always the closing lecture of his course—which, it was certain, must soon overtake himself. His voice was throughout solemn, yet most clear and distinct, and he controlled his feelings in a wonderful degree, while many of his young auditors, conscious that they were hearing him for the last time, sat mute and melancholy. Profound silence prevailed, and soon the large hall, which the venerable professor had graced with his presence for nearly a third of a century, knew him no more forever.

His dyspnœa and difficulty of progression rapidly increased, and he was at length obliged to retire to his bed, not to stretch himself out to rest his sick and wearied body, but to sit up with his swollen and painful limbs hanging upon the floor, as the only posture in which he could find ease and comfort, a posture almost as irksome and distressing as the self-imposed one of St. Simeon Stylites. In this sad manner he spent the last seven months of his precious life, and yet no sigh or groan or complaint ever escaped his lips. He was thoroughly resigned to his destiny, and often alluded with the most perfect composure to his approaching end. He knew that his case was hopeless, and therefore positively refused everything in the form of medication, except the occasional use of a little morphia, to relieve pain and promote sleep. Fortunately the dyspnœa, which had all along been so prominent a symptom, left him several months before his demise. Crippled as he was in body and limb, he was sound in intellect, and conscious of no decay in the faculties of his soul. He conversed, almost to the last day of his existence, with his wonted powers and elegance of diction. Always cheerful, amiable, and courteous, he was full of sympathy and good humour, making constant inquiries after his friends, and expressing a deep interest in everything relating to the outer world. No cloud overshadowed his brain, although his body was frightfully emaciated. The physical machine was completely worn out. His last words were, "A shade better," and, soon after he had uttered them, he sank back and instantly expired, apparently unconscious that he was so near his end. The sufferings attendant upon his protracted illness were solaced by the unremitting kindness of his family and friends.

The dying words of Dunglison forcibly remind one of those of Keats. Asked by one who stood at his bedside, just before he expired, how he felt, he replied in a feeble voice, "Better, my friend. I feel the daisies growing over me." Haller, the illustrious Swiss physiologist, Dunglison's great exemplar, died feeling his pulse. Turning to his brother physician, he said, "My friend, the artery ceases to beat," and expired.

An autopsy, performed at his own desire, a few days after death, revealed an astonishing amount of disease. The semilunar valves at the mouth of the aorta were converted into dense, rigid membranes, the coronary arteries were ossified, the heart was considerably hypertrophied, and the aorta

was one sheet of disease, being thickened, calcified, atheromatous, and in many places fissured. The gall-bladder contained a large concretion, the stomach exhibited evidence of chronic structural lesion, and the kidneys were studded with serous cysts. The brain was sound, and weighed 55 ounces. The funeral took place at St. Stephen's church, of which he had long been an attendant, the coffin being followed from his late residence by his family, intimate friends, and late colleagues. The body was deposited by the side of her whom he had so long and so tenderly loved, at Laurel Hill Cemetery, where a suitable monument will, in due time, be erected to mark the spot—not to commemorate his memory, which needs no such device.

In October, 1824, Dr. Dunglison married Harriette, daughter of John Leadam, Esq., a medical practitioner of London, a lovely and estimable lady, by whom he had seven children, five sons and two daughters, of whom five survive. Two of the sons are in the medical profession, one is a merchant, and the other, J. Robley, has, for a number of years, been connected with the public press. Dr. Richard J. Dunglison is engaged upon a biographical memoir of his father, which cannot fail to afford a new insight into the character of a man who occupied such a high social, literary, and scientific character. His diary, continued through many years of his life, will, if it should ever be published, form a most valuable contribution to the literature of the country. Mrs. Dunglison died of cardiac disease in March, 1853.

In his personal appearance, Dr. Dunglison was decidedly fortunate. When I first saw him, in 1845, he impressed me as a very handsome man. Later in life his countenance had somewhat of a careworn expression. He had a fine bluish-gray eye, regular features, a well-formed mouth, and a lofty forehead, denotive of intellect and intelligence. As he advanced in age, his hair, black in early and middle life, became somewhat gray, and the top of the head slightly bald. He was about the medium height, with a well-proportioned frame and limbs, a dignified mien, graceful manners, and genial disposition. No one could be in his company, even for a few minutes, without feeling that he was in the presence of an uncommon man. There was a personal magnetism in him which no one who approached him could resist. His features are perpetuated in several portraits, one of the most recent of which is that by Sully, painted only a short time before his death for the Musical Fund Society, whose hall it now graces.

In his habits he was eminently orderly and systematic. He knew how to take care of the minutes, and how to occupy his time to the best advantage. Although his life was one of unwearied activity and indefatigable industry, "incredibili industriâ, diligentiâ singulari," I never saw him that he did not seem to have leisure. All his engagements were so happily arranged that he had time for everything. He did daily the day's work. No hours were ever "stolen from his meat and sleep," seldom any from his ordinary enjoyments, pleasures, or amusements. Whatever he had to do he did at once without delay. This promptness was one of the great secrets of his success in life's great struggle. In eating and drinking he was remarkably temperate, although, like most men, he occasionally took his glass of wine, and perhaps no one ever knew better than he how to appreciate a good dinner. At our Wistar parties, those charming reunions of the medical, scientific, and literary men of Philadelphia, he was always particularly joyous and attractive by his anecdotes

and bonhommie. His house was for many years the abode of an elegant hospitality. He retired habitually at half past ten o'clock, generally pulling out his watch and waiting almost to the minute. During his latter years, he invariably, while engaged upon the new editions of his Dictionary, strapped up his two interleaved volumes and carried them to his bed-room, lest some accident should befall them. He was always dressed by seven o'clock in the morning, and breakfasted by a quarter of eight, after which he retired to his study, where he spent the next three or four hours in earnest work. He then generally took a walk, or attended to business, dined at two, and passed the remainder of the afternoon among his books. His evenings were spent with his family, or at some place of amusement, as the opera, theatre, or concert, of all of which he was very fond. In his dress he was scrupulously neat. He filled all the spare moments from his graver occupations in reading or writing; the latter generally being in the form of correspondence, or in some addition to his works, with a view to new editions. He was particularly fond of magazines, books of travels, and works of fiction, among which his favourite authors were Thackeray, Lever, and Miss Braddon. He hardly ever took up a scientific work for mere study; on the contrary, he rather avoided such productions, preferring to read a careful review of them by some competent writer in the best magazines, as the Edinburgh, or London Quarterly, after which, his interest being awakened, he would either buy the book, or get it from the public library. Among the last works he ever perused were Humboldt's Cosmos, Richardson's Clarissa Harlowe, and the Pickwick Papers. He was a rapid reader, skimming with hasty glances the cream of literature. In his earlier days, while actively engaged as a systematic writer, he had a rotatory book-stand in his study, filled with works of reference, which he could thus reach at any time without rising from his chair. His study had an air of comfort and convenience about it, befitting so elegant a scholar, and such a devoted lover of books.

In fact, everything was in harmony with his well-ordered mind. His library, numbering upwards of 4000 volumes, comprised all the more important medical and scientific works in the principal languages of Europe, and was particularly rich in monographs, in dictionaries, medical and non-medical, and in treatises on physiology and the cognate branches of science. About one-third of it was miscellaneous. He spared no money in the purchase of books, the companionship of which afforded him so much happiness, and such substantial aid in the establishment of his reputation as a great scholar and accomplished author.

It is pleasant to know that this rare collection of books has not been desecrated by the auctioneer's hammer; but that it remains as a precious memorial in the possession of a member of the family, who, appreciating its value, will not fail to employ it for the good of others. If there be any one thing more painful than another in the death of a literary or scientific man, it is to see his books scattered, like so much chaff, to the winds of heaven, as soon as he is cold in the grave. The libraries of great men are household gods, not to be lightly shivered by the touch of the profane.

Great men have been celebrated the world over for their bad chirography. That of Dunglison was peculiarly perverse, as angular and zigzag as a worm fence on a Pennsylvania farm. The letters were so singularly incurvated and distorted that, when linked together into words, it was ex-

tremely difficult for one unaccustomed to his hand to decipher them. Rufus Choate was often unable to read his own writing, and our author, I dare say, was occasionally in a similar predicament. As for myself, it was long before I could read any of his letters understandingly at the first effort. For years it was my habit, when I received any communication from him, to run my eye leisurely over it at the first convenient moment, and then to put it by for more careful study the next day.

His religious views breathed a broad catholic spirit. He was too much of a physiologist, and too intimately acquainted with the laws of the Universe, to trouble himself about doctrinal matters. Like Luther, he knew that the gospel was not written in the Bible alone, but on trees and flowers, and clouds and stars. The truly religious man sees God everywhere, in all that is sublime and beautiful in nature and in art, and is utterly indifferent to the narrow-minded creeds of sectarianism. Up to within a short period of his death, he seldom failed to attend divine service on the Sabbath. He was for a long time a vestryman in St. Stephen's Church, with whose former rector, the late Rev. Dr. Ducachet, himself in early life a promising member of the medical profession, he was on the most intimate terms.

Another of his familiar friends, a man for whose character he cherished a very warm regard, was the late Rev. Dr. Bethune. They were often together, and greatly enjoyed each other's genial humour. Bethune was a genuine disciple of Izaac Walton; and, like Dunglison, possessed an inexhaustible fund of anecdote, extending over a wide range of topics, and told with irresistible effect. After his removal to Brooklyn, he always made the house of his friend his home during his visits to Philadelphia. Their last interview occurred only a short time before the death of Bethune, when the latter was already labouring under the premonitory symptoms of the disease which so suddenly carried him off. A beautiful tribute, one of the last published productions of his pen, and written, in touching terms, soon after the death of his friend, attests the warm regard which Dunglison had entertained for him.

In his friendship he was cautious but sincere and steadfast. I do not know that he ever had an enemy. He was free from malice, which, to use an expression of Lord Bacon, "he never bred nor fed." His manners were always dignified; and, although he was fond of talking, he was never arrogant, ostentatious, or dictatorial; "neither was he one," to employ the quaint language of another old writer, Dr. Rawley, "that would appropriate the speech wholly to himself, or delight to outvie others, but leave a liberty to the co-assessors to take their turns. Wherein he would draw a man on, and allure him to speak upon such a subject, as wherein he was peculiarly skilful, and would delight to speak. And for himself he contemned no man's observations, but would light his torch at every man's candle."

Dunglison never indulged, even as a boy, in the ordinary sports and pastimes of youth. He loved study and books better than the outer world. I doubt whether he ever shot a bird, although he was fond of fishing, and occasionally tore himself away from his books to cast a hook. In early life he was a good pedestrian, and often took long walks, chiefly as a means of healthy recreation; but as he grew old, owing to his gouty suffering, exercise became burdensome to him, and he led a strictly sedentary life. For many years he was in the constant habit, at a certain hour of the day, of visiting his publishers, at the southeast corner of Fourth

and Chestnut Streets, long known as the business house, first, as far as his interests were concerned, of Carey & Lea, then Carey, Lea & Blanchard, then Lea & Blanchard, then Blanchard & Lea, and, finally, Henry C. Lea. He loved to chat there for half an hour about men and books, or whatever might at the moment be of general interest, when he would walk leisurely back, to resume the labours of his study. The different firms here alluded to seldom, during his long residence in this city, reprinted a foreign medical work without first obtaining his judgment of its merits. This confidence in the value of his opinion continued down almost to the latest day of his last illness.

Passionately fond of music, he had a highly appreciative ear, and was himself, especially in his younger days, a tolerably good performer on the piano and the flute. He took for a long time an active part in the management of the Musical Fund Society, of which, as previously stated, he was for a number of years President. Music, in his opinion, was a divine emanation, a gift of God, tending to elevate the soul, to purify the heart, and to refine the manners. In its more exalted flights, it inspired his mind with solemn and religious feeling, and, with Pythagoras, made him dream of the music of the spheres. It was deeply rooted in his affections. During his last illness the use of the piano was often invoked to soothe his pains and to beguile his thoughts.

The last systematic work which Dr. Dunglison wrote was his Practice of Medicine, issued in 1842. After that time his leisure was fully occupied in bringing out new editions of his Physiology, Dictionary, Materia Medica, and New Remedies, which underwent so many and such marked changes, that it was difficult to recognize them, in their new forms, as the same productions. The labour spent in this way was immense, and can only be appreciated by one who is himself an extensive author. Most of his works were thus literally duplicated, if not triplicated and quadrupled.

After the retirement of the late Dr. Robert M. Huston from the Jefferson Medical College, Dr. Dunglison became his successor in the office of Dean, and he acted in this capacity until he himself was obliged to leave the school. The amount of labour which this new office devolved upon him was immense, and doubtless materially contributed to undermine his already failing health. He was obliged to carry on a most onerous correspondence; and, during the sessions of the College, his rest and comfort were constantly interrupted by his intercourse with the students. Fortunately he was accustomed to work, as well as to systematize his time, and he was thus enabled, notwithstanding his declining health, to manage the affairs of the Institution with consummate ability. As Dean, he was exceedingly popular. The students looked upon him as a warm, trust-worthy friend, whose advice they never hesitated to seek when they stood in need of it. His colleagues, with whom he was always on the most pleasant terms, will not soon forget the *petits soupers* which for many years graced his table at the annual faculty meeting. It was the custom on such occasions to audit the Dean's accounts, and to talk informally over the affairs of the school. At half past 9 o'clock the door of the dining-room usually flew open, and for the next three hours all was merriment and good humour amidst "the feast of reason and the flow of soul," enlivened by the agreeable conversation of the host, generally coruscating with the happiest anecdotes.

Dunglison, like most professional men, was compelled, in his younger

days, to labour for his support, and it was not until after he had reached his fortieth year that his pecuniary circumstances became easy. His income in the University of Virginia was barely sufficient for the maintenance of his growing family. An annual salary of fifteen hundred dollars, with the proceeds from a small class, and a dwelling rent free, constituted his chief revenue; for, as yet, his books had not been pecuniarily productive. The University of Maryland, in which he remained only three sessions, was equally unremunerative; and his chair in the Jefferson Medical College, until the reorganization of the Institution in 1841, afforded him no substantial emolument. From that time on, however, his pecuniary matters assumed a more imposing form. The number of students rapidly augmented, and for years the income of the Faculty was without a parallel in the history of medical schools. For many sessions, the proceeds of each chair ranged from six to seven thousand dollars, and this sum, added to the receipts from his works, now largely sought after as text books, placed him not only in very easy and independent circumstances but enabled him to lay the foundation of what, in this country at least, may be regarded as a respectable fortune for a medical man. Probably no medical author ever reaped so much from the sale of his works. Edition after edition was called for, and thus made him rich. Of the Dictionary alone upwards of 55,000 copies were issued during his lifetime, and of all his works 125,000 copies, equal to between 150,000 and 160,000 volumes. What medical author ever had so many readers?

It is singular how, apparently, an insignificant circumstance may overrule a man's destiny. Dr. Dunglison had long felt a desire to visit Europe; but no favourable opportunity for carrying out his wishes occurred until April, 1854, nearly a third of a century since his immigration, when he sailed from New York on the Pacific, on which he returned in the following September. He had intended to remain a few weeks later, and had therefore engaged his passage on the Arctic, which was lost on that trip with nearly all on board of her. He had been induced to return earlier at the earnest solicitation of one of his colleagues, and was thus probably saved from a watery grave. He received much attention while abroad; and his health, impaired by incessant labour, was greatly invigorated.

In summing up the character of Dr. Dunglison biography must accord to him extraordinary talents, untiring industry, towering ambition, a definite aim in life, vast erudition, undeviating fidelity to his profession, and an unblemished character. He was a shrewd observer of men and things, an able thinker, and, without any exalted genius, he had a clear logical mind, capable of vast and varied labour. The extent and variety of his knowledge were prodigious. He was the most voluminous writer of his day on this continent, both in and out of the medical profession, and one of its greatest and most accomplished authors. In point of bulk and vast erudition the works of all his American contemporaries—Noah Webster, Worcester, Cooper, Irving, Bancroft—sink into insignificance. His life was a succession of literary triumphs.

It is not easy to determine how such a man accomplished such a vast amount of labour without an intimate knowledge of his character. None but a superficial, ignorant person will pretend to affirm that it was the result simply of industry, or of industry combined with order and system. These, undoubtedly, had their effect; for without their aid he would have worked in vain. He was, as has already been seen, a many-sided man,

with a rare blending of mental qualities, an admirable symmetry of mind and character, a delicate and discriminative judgment, a capacious memory, a fervent love of truth, a keen insight into human nature, an amazing coolness and self-control, great powers of endurance, and a remarkable freedom from prejudice, eccentricity, and exaggeration. These it was which fitted him for his peculiar stations in life, and made him what he was, a beacon light in the world of medical literature, and one of the foremost writers and teachers of his day.

No human character is, or can be, entirely perfect. That of Dunglison had its defects, but they were so trivial as in no material degree to impair its symmetry. His failings, as they impressed me during a close observation of thirteen years of official connection with him, were timidity and a spirit of conservatism, which, I sometimes thought, were at variance with the requirements of the age in regard to the true interests of medical education. Inactivity is not always masterly; conservatism not always wisdom. It was a maxim with him to let well alone. He saw no necessity for any change in the curriculum of instruction in our schools. He always thought that seven chairs were quite enough, that it was unwise to reduce the number of didactic lectures, and that an independent board of examiners, so common in the British schools, and attended with such salutary results in regard to the best interests of humanity and of medical science, was not adapted to the wants of this country. But justice demands that I should add that, although he might have warmly opposed a measure of reform, he never failed, when carried by the majority, to lend it the influence of his name and example, with a grace and dignity so characteristic of a true gentleman.

It will not be without interest in this connection with his mental organization to recall attention to his cerebral developments. His head was large and well formed, although the brain weighed only 55 ounces, 2 ounces more than the ordinary average, as ascertained by Sims, Clendinning, Tiedemann, and Reid, and 11 ounces less than Cuvier's, 8 than Dr. Abercrombie's, and $7\frac{1}{2}$ than Dupuytren's. It was generally supposed, until recently, that great cerebral bulk was a measure of mental power; but it would seem from the researches of the two Wagners, father and son, that more depends, in this respect, upon the number, size, and depth of the convolutions of the brain than upon its absolute weight and bulk, and that superiority of size cannot, in the existing state of our knowledge, be regarded as a constant accompaniment of superiority of intellect. Indeed, it is a matter of daily observation that men of enormous heads have often very obtuse minds, utterly incapable of any great performances; and, on the other hand, that many persons of extraordinary talent and mental vigour have uncommonly small heads; in other and more comprehensive terms, a large brain may be very sluggish, a small one very active. The brain does not differ from other organs. It is susceptible of the highest improvement by study and persistent culture. A muscular man is not necessarily strong because of his muscular development, or a non-muscular one necessarily weak. In either case, quality, aided by exercise and training, determines the degree of power. In Dunglison, the brain, though not unusually large, was composed of the noblest material, arranged, like the columns of a Corinthian dome, in the most admirable proportions. The harmony and symmetry of his mind were perfect, a circumstance which could not have happened if the cerebral organs had not been cast in the finest mould.

Dunglison was born an author. His tendencies as a writer showed themselves in his early youth. "As the morning cloud," as some one has beautifully expressed it, "often foreshadows the nature of the approaching storm, so the nature of the boyish taste often foreshadows the life of the man. In some way or other the man is tracked in the footsteps of the child."

> "———The childhood shows the man,
> As morning shows the day."

A feeling of internal power had come early upon him, and he never for a moment allowed it to elude his grasp. He buckled himself to his life's work with a full faith in his ability to vanquish obstacles, and to earn enduring fame.

He was the pioneer in physiology in the United States, the first who taught the science systematically in our lecture-rooms, and who gave it a proper impetus among professional men. Prior to his time it was a confused mass, without system or order, little understood, and considered as of comparatively little importance as a branch of medical education. His work, composed before he had attained his thirty-second year, created a new era in the study of this country, and justly earned for him the honourable title of "Father of American Physiology." He had chosen a noble theme for his life-long labours and contemplations—the progress of man from his mother's womb, through all the varying and intricate changes of his being down to the moment of his dissolution by natural and adventitious causes—and how nobly and thoroughly he performed his self-imposed mission needs no mention here. If he did not greatly enrich the domain of Physiology with new facts, the results of tedious experiments and of torturing confessions—experiments from which his refined and sensitive nature recoiled with horror and disgust—he enlarged it by his vast erudition, his patient research, and his masterly criticism, thus winnowing the grain from the chaff, and placing it in a simple and attractive form before the profession and the public. "Though a man cannot," says Ben Johnson, "invent new things after so many, he may do a welcome work yet, to help posterity to judge rightly of the old."

Physiology was his first and last love. He taught it publicly for upwards of forty years, and the last lecture which he ever delivered was devoted to its elucidation. Such constancy is as rare as it is sublime.

Great discoveries are as uncommon in our profession as they are in other pursuits. Dr. Dunglison never rent the veil which conceals the mysteries of science; nor was he the founder of any school in medicine or of any sect in philosophy. His mission was a more humble yet not a less noble one. He was a reformer of the prejudices of his age, and powerfully aided not only in emancipating the professional mind from the errors of false experience, so common in our day, but in laying a solid and enduring foundation of a medical literature destined to exalt the national character, and to rival at no distant period, in depth and vigour, that of the Old World. Well may the biographer exclaim with the poet—

> "A life well spent, whose early care it was
> His riper years should not upbraid his green;
> By unperceived degrees he wears away;
> Yet, like the sun, seems larger at his setting."

# SUMMARY OF THE TRANSACTIONS

OF THE

# COLLEGE OF PHYSICIANS OF PHILADELPHIA.

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1869. *October* 6. *Case in which the Cæsarean Operation was practised. Death of Mother on seventh day from (supposed) Intestinal Obstruction; Child living.*—Dr. WALTER F. ATLEE read the following case:—

September 17, I was called by Dr. W. H. Hooper to see Mrs. O'H., for the purpose of practising the Cæsarean operation. Twice before she had been delivered of a child at term by embryotomy. When I reached the house, in company with Dr. Hooper, Dr. Boker, and Dr. Fassitt, the patient had been in labour for several hours. She was thirty-one years of age, and apparently a very healthy woman. The child was alive and at full term. The mouth of the womb was open to the size of a silver dollar. The membranes were intact. As nearly as could be ascertained, the antero-posterior diameter was not over two inches.

The patient consented without hesitation to the Cæsarean operation when it was proposed to her. The bowels had been freely opened by oil in the morning. The bladder was emptied by the catheter. Chloroform was administered. Probably two drachms were used before she was sufficiently insensible to pain. The incision was made through the linea alba, as nearly as could be in the median line of the body, and about six inches in length. The womb was divided by incisions, made quickly, but not too profoundly, to avoid opening the membranes containing the child. The placenta was found directly under the line of incision, and was detached and dragged out, the membranes being, of course, opened in so doing. The child was delivered by the breech. The delivery was accomplished with difficulty, a part of the head being firmly held in the superior opening of the pelvis. Some blood was lost during the incising of the womb, but, certainly, not more than is lost in ordinary labour. After the contraction of the womb there was some difficulty, owing to the small number of assistants, in keeping the intestines inside the abdominal cavity.

The wound in the womb was simply well cleaned; that in the walls of the abdomen was sewed together with gilded silver wire, a narrow compress was placed over it, and a bandage applied around the abdomen. Until the 21st, or for four days, only barley water was given as nourishment. Opium was given regularly. The urine was drawn off morning and evening. The lochial discharge was as usual, as well as the secretion of the mammary glands. On the 21st, being four days after the operation, the bandage was removed, and the wound was found to have healed by first intention. There was no tenderness any-

where, except in the left iliac region, where the patient said it felt sore, and shrunk from having it pressed. There was, however, on this day considerable tympanitic distension. The pressure of the bandage was pleasant, and the woman asked to have it applied tightly. There was no chill at any time, the lochial discharges were as usual in quantity and quality, and the mammary glands performed their functions.

The patient died on the 23d, at 9 o'clock P. M., and, probably, from enormous tympanitic distension in the abdominal cavity. There was no passage from the intestines after the operation. No post-mortem examination could be obtained.

The physician who had attended this woman after her second confinement, informs me that a very large pelvic abscess formed at that time and opened into the rectum. The obstruction in the intestines, from which she died, at least in my own opinion, may have been caused by incarceration under some fibrous band, the result of pelvic abscess; or may have been the result of intussusception, or of knotting of the small intestine. There was more handling of the intestines than there would have been with a greater number of assistants at the time of the operation, but no more could have been obtained without a loss of time that might have been exceedingly disadvantageous.

*December* 15. *Effects of Chloral, Chloroform, and Ether hypodermically employed.*—Dr. S. Weir Mitchell exhibited three pigeons under the influence of chloral, chloroform, and ether, respectively. One bird had received a dose of chloral, gr. iv, by hypodermic injection, five hours previously, at 3 P. M., under the influence of which it still remained in a state of profound stupor or sleep. Another bird had received two hypodermic injections of chloroform, gtt. x, at 3 P. M., and gtt. x, at 6 P. M.; and a third pigeon had received two hypodermic injections of ether, gtt. xxv to xxx, at 3 P. M., and again at 6 P. M. The last two pigeons were in deep sleep, but could be aroused by shaking. Dr. Mitchell had been led to employ chloroform from the supposition that the effects of chloral might be due to the liberation of chloroform in the system. He had subsequently found, however, that Dr. B. W. Richardson, of London, had done the same thing; and indeed that several British journalists were acquainted with the effects of chloroform when hypodermically injected. Dr. M. had found, however, that the dose of chloroform required to produce sleep was greater than the amount of chloral capable of producing similar effects could contain. He suggested that the formate of soda, the other product of the decomposition of chloral, might produce some part of the effect. It was to be remembered that some of the French observers had denied that chloral does undergo decomposition in the system. The effects of ether and chloroform also appear to pass off more rapidly than those of chloral. To show the remarkable difference in the susceptibility of pigeons to different hypnotics, Dr. M. had administered extr. opii gr. l. (fifty) to one of these birds during the same day, without producing the least narcotic effect.

Dr. H. C. Wood, Jr., remarked that probably the difference in the action of chloroform when given in the three different ways—by inhalation, by the mouth, and hypodermically—might be accounted for by the differences in the rapidity and degree of absorption. When ordinary doses were given by the mouth, he thought it was resolved into vapour and merely produced a local effect; although it is true that a dose of f℥j of

chloroform will narcotize. When it is given by the lungs, narcosis is rapidly produced, and it is doubtless in this way that a paralyzing influence on the heart is most positively exerted. When it is used hypodermically, it is probable that intermediate effects are produced. Dr. W. was not inclined to regard it as likely that chloral is decomposed, since, after its administration, the breath is distinctly tainted with the odour of the drug. He also mentioned that he had succeeded in inducing profound anæsthesia in a cat by the vapour of cold alcohol.

*Case of Bony Union after Intra-Capsular Fracture of Cervix Femoris.*—Dr. John H. Packard presented, through the courtesy of Dr. J. M. Adler, a specimen of united intracapsular fracture of the neck of the femur.

The specimen consisted of the upper part of the right femur, in which bony union of an intracapsular fracture had apparently taken place. A vertical section had been made through the head, neck, and trochanters. The history of the case was as follows: The patient, an old lady, æt. about 65, was partially hemiplegic, and suffered from paralysis of the neck of the bladder. By a fall from her bed, she sustained at the same time a fracture of the cervix femoris, and another of the lower end of the right radius. Her foot was inverted, the leg shortened, and there was pain in the groin and hip-joint, and crepitus. The femoral fracture was diagnosed as intracapsular, and treated with a straight splint, extension and counter-extension being made by means of adhesive plaster. The apparatus was removed in seven weeks.

Five months after the receipt of the injury the patient died. The capsular ligament was found untorn and its interior healthy.

Dr. Hewson called attention to the resemblance of this specimen to one in the possession of Sir R. Adams, and figured in his work.

On motion, the specimen was referred to a committee consisting of Drs. Packard, Hewson, and John Ashhurst, Jr., which presented the following report January 19, 1870:—

"After careful study of the specimen, we are convinced that it is one of genuine bony union of an impacted intracapsular fracture of the cervix femoris."

1870. *January* 19. *Suspension of Intestinal Secretion and Failure to produce Purgation after Section of the Par Vagum.*—Dr. H. C. Wood, Jr., said:—

I believe the Fellows of the College are generally aware that during the past summer I was engaged in an elaborate investigation into the action of certain alkaloids upon the heart and nervous system. In the course of this inquiry, after cutting the pneumogastric nerves and administering drugs, I was surprised to find that veratria and the allied alkaloid veratroidia failed to purge or vomit. I was at first disposed to assign this to idiosyncrasies on the part of the animals under observation; but upon investigation of the subject it became evident that this was not the cause, for when my experiments had reached nearly thirty, combinations of the strongest cathartics had still uniformly failed to produce purgation. Arsenic, one of the most certain purgatives in the lower animals, failed in a number of cases. In order to render the experiments satisfactory, I, in some instances, purged the animal with calomel, and on the following day administered double the dose, adding one or two drops

of croton oil and ten grains of extract of jalap; but the bowels remained unmoved. The intestine was found pale, almost bloodless, with sometimes a little reddening of the mucous membrane. I was the more astonished at the failure, because the pneumogastrics are stated, in our works upon anatomy and physiology, to have no direct relation to the bowels. I have found, however, that Mr. Kollman, in a prize essay published in the *Zeitschrift für Wissenschaftliche Zoologie*, Band x., states that he has distinctly traced their distribution to the whole length of the intestine; and I have an impression that one or two English authorities have made a similar avowal. In looking up the literature of the subject I learned that Sir Benjamin Brodie, in a paper published in 1814, mentions the failure of purgatives under circumstances similar to those which I have described. He employed arsenic, but his observations were only four in number. Dr. Reid, however, repeating Brodie's experiments, claims that he has found arsenic to increase the intestinal secretion as much after section of the par vagum as in the uninjured animal. I must, however, regard Dr. Reid's observations as faulty. Only in one case does he mention the occurrence of purgation, while in the others he found merely mucus in the bowels, nothing being known as to how much was there before, and how much was secreted after the administration of the drug. I almost doubted the correctness of the statement that purging was produced at all, until my 25th experiment, when the bowels were violently operated on. Slight purging occurred in the 26th case also. Thus my observations show that in most instances it is impossible to produce purgation after section of the pneumogastric nerves, but that in a few cases there is a deviation from this rule. These are the facts; what explanation can be offered?

Bernard and Schiff agree that if the pneumogastrics are cut in the neck, secretion is arrested in the stomach; if cut below the diaphragm secretion in the stomach is not affected. It is very difficult to divide the nerves in the cat (the animal on which I have operated) satisfactorily at this latter point. I have endeavoured to do it, and have heretofore failed; but am willing to accept the results of these authorities. Schiff explains the arrest of the gastric secretion by the disturbance of the action of the heart and lungs. Now it is evident that arrest of secretion in the stomach must be identical in character with arrest of secretion in the bowels, and it is difficult to see exactly how this can depend on disturbances of the thoracic organs. I have therefore endeavoured to form some other explanation of the facts, but am not, as yet, willing to commit myself to any theory. One that immediately suggests itself is, that the par vagum is the vasomotor antagonist of the abdominal sympathetic, since it has been found by Schiff, Bernard, and others, that when the splanchnic nerves are cut the vessels of the intestine are dilated, and that when they are galvanized or otherwise excited, the capillaries contract. Bernard has also proved that section of the pneumogastric in the neck causes the gastric mucous membrane to become pale.

Dr. Wood also said: After section of the pneumogastrics in the neck it is practically impossible for the animal to swallow. I therefore, in some instances, administered the purgative from one to three hours before cutting the nerve. Sometimes catharsis had already commenced at the time of the operation; in such cases it then ceased. If it had not previously occurred it did not afterward take place. Arsenic and veratria were generally administered hypodermically.

Dr. Wm. Pepper said: The very interesting communication made by Dr. Wood appears not only to possess much value in regard to anatomy and physiology, but to be of even greater importance in its bearing upon pathological states of the sympathetic system in man. By the amount of light thrown upon the functions of the abdominal sympathetic and by the greater degree of accuracy obtained in the investigations of late years, we are enabled to refer an increased number of diseased conditions to disorders of this nerve. One of the most positive influences exerted by the nervous ganglia of the abdomen appears to be upon the secretion of the intestinal mucous membrane. Thus the evidence is gradually accumulating in relation to the dependence of cholera upon paralysis of these nervous centres from over irritation; and there are other analogous conditions which are unquestionably due to a similar morbid action. The cases of section of the splanchnic nerves in lower animals, attended with profuse serous purging, show the result of entirely withdrawing the influence of the sympathetic nerve, and tend to confirm the theory advanced by Dr. Wood to explain the phenomena observed in his experiments. There is another symptom of diseased action of the sympathetic which depends upon the connection between abnormal states of the abdominal ganglia and the condition of the cutaneous capillaries. The marked effects which injury of the abdominal sympathetic produces, the pallor, the reduction of temperature, the diminished pulse and arrest of cutaneous circulation, are probably all evidences of the vaso-motor power possessed by this portion of the nervous system. I have recently met with two cases in which, from pressure upon, or direct lesion of, the sympathetic ganglia in the abdomen, the function of this nerve was apparently disordered; in both cases profuse sweating occurred. One patient was under my observation for eighteen months, suffering with an abdominal tumour of either aneurismal or cancerous nature. One of the symptoms most constantly complained of was profuse sweating. The skin was drenched in perspiration, so that, although he was a cleanly person, an unpleasant exhalation could not be prevented. It was a remarkable fact that by altering the patient's position, so as to alter the pressure, the sweating could be confined to one side; obstinate constipation was conjoined with this condition. As no post-mortem examination was permitted it was impossible to ascertain with accuracy the portions of nervous structure which were affected. In the last few days (through the courtesy of Dr. A. H. Smith, who called me in consultation) I have had the opportunity of studying a second case in which this combination of obstinate constipation and profuse sweating was present. In this latter instance the disease consisted of encephaloid cancer of the abdominal lymphatic glands. At a point behind the pancreas, and corresponding to the seat of the solar plexus of the sympathetic, the diseased glands formed a large flattened mass, closely adherent to the vertebral column posteriorly, and to the pancreas anteriorly. Although it was impossible, owing to the circumstances of the autopsy, to make a careful dissection of the nervous ganglia and branches, there can be no doubt that they were involved in, or pressed upon by the cancerous mass. These two cases were brought to my mind by the remarks of Dr. Wood, and as both of them presented unusually profuse sweating, with marked dryness of the mucous membrane of the intestine, I thought it might be interesting to speak of them, although informally, at this time. I propose, however, to publish the cases *in extenso*, with remarks, at an early day.

Dr. H. C. Wood, Jr. I omitted to state my observations in regard to vomiting. Schiff says that after section of the pneumogastrics, vomiting can occur so far as the movements are concerned. He injected peculiar food which could be certainly recognized again, through the œsophagus into the stomach; and after repeated attempts it was thrown up. He also states that he had vomited dogs with tartar emetic after division of the nerves near the cardia.

I have tried arsenic and veratria. They certainly always failed when the pneumogastrics were cut in the neck.

*Pyæmia simulating Rheumatism.*—Dr. James H. Hutchinson read the following report of the case:—

The case which I am about to report to the College, while it is by no means regarded as an isolated one, presents so many points of interest and illustrates one of the rarer forms which pyæmia may assume, that it is believed it will prove of interest to the Fellows.

The patient, John G., an Irishman, aged thirty-three years, was admitted into the lower surgical ward of the Pennsylvania Hospital March 25, 1869, in consequence of a swelling of the knee, which was represented as the consequence of having fallen upon a rusty nail, in this way a flesh wound of the inner part of the left thigh, just above the patella, being inflicted. The wound seems to have been slight, and was already healed at the time of his admission. In spite of the swelling of the joint, Dr. Hewson, the attending surgeon, saw no reason to believe that the nail had entered it. On the 28th of March the patient had a decided and well-marked chill, followed by profuse sweating. A few days afterwards it was noticed, for the first time, that several of the large and many of the small joints were swollen, red, and painful, particularly the left knee—the original seat of the injury—both wrists, the right shoulder, and the joints of the fingers of both hands. A few days subsequently the ankle-joints became involved, but not to so marked a degree as the joints already alluded to. It is said that a second chill did not occur, but it was observed that the patient sweated freely, especially in the afternoon. He was transferred, April 5, to the medical ward as a case of acute articular rheumatism. When admitted into my ward, the knee, the shoulder, the wrist, and finger-joints were still swollen and red, and although fully recognizing that the disease with which I had to do was not acute articular rheumatism, as it is rare in that disease to have so many articulations involved at one time, and very infrequent to have the smaller joints affected, I was inclined to believe that the case was one of what is generally known as rheumatic gout, or, as it has been recently called by Dr. Garrod, rheumatoid arthritis; and it was not until I had carefully studied the case, for the purposes of a clinical lecture, that I discovered its real nature. The following are the symptoms observed at that time: Great swelling of the left knee, evidently dependent upon effusion into the joint; redness not so intense as is usual in rheumatism; swelling, and a painful condition of several of the other joints; great frequency and feebleness of the pulse; anxious and hurried respiration; a moderate increase of the temperature; excessive prostration; profuse perspiration, which had a marked tendency to recur at about 4 P. M. every day, and had not the peculiar acid smell so characteristic of rheumatism; a hay-like or sweetish odour of the breath, and a light straw-yellow tint of the skin. The patient complained of great pain when moved, and even at this stage raising him in bed occa-

sioned so much discomfort that auscultation of the back of his chest was performed with difficulty. Its anterior surface was frequently examined, and no sign of disease of the lungs could at this time be discovered. The præcordial region was, of course, included in this examination, and no physical sign of inflammation of the pericardium or endocardium, or other disease of the heart, was at this or any subsequent period of the disease detected.

The following indicates the state of his pulse, respiration, and temperature from April 5 to April 10, inclusive:—

| | Pulse. | Respiration. | Temperature. |
|---|---|---|---|
| April 5, P. M. | 88 | 32 | 100⅖ F. |
| " 6, A. M. | 110 | 38 | 102 |
| " 6, P. M. | 106 | 42 | 100 |
| " 7, A. M. | | 30 | 99½ |
| " 7, P. M. | | 28 | 99 |
| " 8, P. M. | | 40 | 101 |
| " 9, A. M. | | 28 | 100 |
| " 9, P. M. | 118 | 38 | 102 |
| " 10, P. M. | Running. | 52 | 102½ |

On April 10 the following note was made: Patient extremely ill, all the symptoms having assumed during the past few days an extremely typhoid character; is delirious at night, and during the day lies flat upon his back, with his eyes open, muttering to himself in an incoherent manner. Although he is with difficulty roused to answer questions, his answers are intelligent and intelligible. There is subsultus tendinum to such an extent as to interfere materially with a correct appreciation of the frequency of the pulse. There are no signs or symptoms of cardiac complication; nor is there material alteration in the character of the renal secretion, but it, as well as the feces, is frequently passed involuntarily. The skin is now of a decidedly greenish hue. Pain and swelling of the joints still continue, and the pain is so great when a physical examination of the posterior surface of the chest is attempted, that it can only be made in a very unsatisfactory manner. The only physical signs of disease which can be detected are slight dulness on both sides, posteriorly, together with coarse, crepitant rales diffused throughout the lungs. The dulness was not, however, sufficient to induce the belief that there was hepatization, or other consolidation of the lungs, and it was attributed to congestion.

State of the pulse, respiration, and temperature from April 12 to April 17, inclusive:—

| | Pulse. | Respiration. | Temperature. |
|---|---|---|---|
| April 12, P. M. | | 46 | 101 F. |
| " 13, P. M. | | 38 | 101⅗ |
| " 14, A. M. | | 50 | 100 |
| " 15, A. M. | 108 | 36 | 100 |
| " 15, P. M. | 110 | 36 | 100½ |
| " 16, P. M. | 112 | 36 | 101¼ |
| " 17, P. M. | 112 | 34 | 101½ |

*April* 16. In consequence of the profuse sweating, there is, all over the surface of the patient's body, a copious eruption of sudamina; many of the minute vesicles have developed around themselves red areolæ, which are somewhat elevated above the surrounding skin, and in many cases the vesicle has become a pustule. This eruption in some places bears a slight resemblance to the rose-coloured spots of typhoid fever, but is readily distinguished from these by a close examination, which generally enables

the observer to detect the vesicle, or pustule, seated at the summit of each papule. That there is some resemblance is shown by the fact that two of the physicians who have seen the case are inclined to think it one of typhoid fever complicated with rheumatism.

On the 17th of April a large abscess was discovered on the inner side of the left knee, near the seat of the original injury, producing a swelling and deformity of the part very different from that which was noticed when the patient first entered the ward. On the day following, the redness over the abscess had increased, and, with the consent of Dr. Hewson, the case was transferred to the surgical ward, where the abscess, which was clearly a secondary one, was freely laid open. Recovery ultimately took place, but the convalescence was unusually protracted, and the man for a long time bore in his appearance the traces of the severe constitutional disease to which he had, on more than one occasion, nearly succumbed. He was finally discharged from the hospital on July 23, after a stay of 119 days. And of his subsequent history little is known, except that on one occasion he was seen by Dr. Charles T. Hunter, one of the residents of the hospital, who tells me that there was impaired function of the left knee-joint, but apparently no disorganization of any of its important structures.

It is scarcely necessary to add that as soon as the real nature of the disease was recognized, the treatment consisted in stimulants, tonics, and beef-tea—tincture of the chloride of iron being given in doses of twenty drops every two or three hours.

To those among the Fellows of the College who think that pyæmia is an invariably fatal disease, the circumstance of this man's recovery will form an insurmountable objection to the acceptance of the diagnosis of pyæmia affecting principally the joints; but reference to several papers on the subject has convinced me that a recovery from this disease is by no means impossible. Thus, Bristowe, in his article on Pyæmia, in Reynolds's *System of Medicine*, says a certain proportion of cases recover; and Savory, quoted by Braidwood, says: "In acute and well-marked pyæmia one can hardly venture to admit a ray of hope. On the other hand, as a general rule, the longer the patient can struggle against the mischief, the more chance is there of his being ultimately rescued from the perils through which he has to pass."

I find also, by reference to the above and other authorities, that the affection of the joints is perhaps not so uncommon a manifestation of the disease as many of us might be inclined to suppose. Bristowe (Reynolds's *System of Medicine*, vol. i. p. 218), in the article above alluded to, says that it frequently happens that pain and swelling attack the joints, small as well as large, and other superficial parts, and subside without leading to further mischief; and in another place speaks of the liability to mistake this disease for acute articular rheumatism. Braidwood, in his monograph on this subject, reports cases presenting rheumatic symptoms, and in addition to expressing his own conviction on the subject, quotes Paget, who says: "The nearest affinities of chronic pyæmia are with rheumatism through gonorrhœal or urethral rheumatism." A similar opinion is expressed by Wilks, in his article in *Guy's Hospital Reports*, Series III., vol. vii. p. 133. He not only holds that the joints may be secondarily involved and disorganized, but says: "As regards the joints, it will be noticed, on the perusal of the cases, that in those that were acute, and the course of the disease rapid, nothing was observable but increased

effusion into the synovial membrane," and adds that "chronic cases are very apt to involve the joints and not unfrequently terminate in recovery."

The eruption was so prominent a feature of the case that it will be recollected it caused it to be mistaken for one of typhoid fever; but the eruption of the character witnessed in this case appears to be by no means an infrequent occurrence in pyæmia, for Bristowe says: "The sudamina are sometimes surrounded by a zone of congestion, which, by a careless observer, may be mistaken for the spots of typhus or enteric fever," and Mr. H. Lee, Dr. Wilks, and, I think, Braidwood, refer to it. It may be well to add to this that there were no symptoms of either typhus or typhoid fever, except excessive prostration, present, and it will generally be admitted, it is thought, that the so-called typhoid state is a necessary accompaniment of the disease under consideration.

The slight severity of the original wound, and the fact that cicatrization had taken place before the occurrence of the first chill, may be regarded by some as sufficient reason for the exclusion of the diagnosis; but there are cases on record that prove that the existence of an open sore is by no means essential. Thus, Wilks, in the admirable paper already alluded to, reports a case in which the disease occurred some time after the wound made by the removal of an epithelial cancer of the lip had cicatrized, and also other cases in which the only apparent exciting causes were either unopened abscesses or internal abscesses, and refers to the fact that gonorrhœa or leucorrhœa may often be the starting point of suppurative fever.

In this connection it may be well to allude to the great resemblance which certain cases of the so-called gonorrhœal rheumatism bear to the disease of which I at first thought my case was an instance—rheumatoid arthritis; and Paget's views on this point, which I have incidentally quoted, confirm an opinion which I have held for some time—that the latter disease and rheumatoid arthritis are essentially the same, and the case which I have reported to-night induces me to believe that there is some connection between these two and pyæmia affecting the joints, even if the relation is as yet ill-defined and vague.

Dr. B. H. Coates related a case of pyæmia that had occurred many years before, the true character of which was then, of course, unknown. A boy, while fishing, was wounded in the vicinity of the knee-joint, and secondary abscesses resulted.

Dr. Caspar Morris.—I was about to refer to the same case. It was, I think, in 1824 that the patient came under our observation at the Pennsylvania Hospital. We were told that the knee-joint wound had been caused by the sharp fin of a catfish. In the state of pathological knowledge which then existed we were disposed to refer the subsequent conditions to some special poison connected with the fin. The man finally died, with swellings of all the joints and symptoms of pulmonary phthisis. We who have been so unfortunate as to meet with many cases of pyæmia in parturient women, have seen occasional instances of recovery, and in such cases I have been disposed to look upon abscesses in the limbs as a favourable symptom.

Dr. F. F. Maury stated that he had seen two cases of recovery from pyæmia, following surgical operations.

Dr. Ashhurst said that among a large number of cases of pyæmia which had come under his observation, he could then recall only two instances of recovery. One of these cases was like that reported by Dr.

Hutchinson, except that the symptoms were milder; the patient at no time appearing in great danger from the pyæmic condition. The case was supposed by some of those who saw it to be one of acute rheumatism. It occurred after primary excision of the radius for a gunshot fracture, the pyæmic symptoms (among which articular pains, extreme debility, and the peculiar hue of skin were prominent) not being developed until the wound was nearly healed. The other case, by a curious coincidence, also occurred after excision of the radius for gunshot fracture. This was a secondary operation, and the portion of bone removed was about four inches in length. The patient was attacked with rigors on the tenth day, and was extremely ill for about a fortnight during very hot summer weather. Abscesses formed above and below the wound, but did not involve any important structures. This patient eventually recovered with a good limb. His treatment consisted of stimulants, concentrated food, and quinia. The rigors yielded after a week to large doses of this drug, and at the end of another week he became convalescent. Dr. Ashhurst added that his experience confirmed Dr. Hutchinson's remark that only chronic cases get well; the acute cases invariably die. Death sometimes seems to occur most quickly in those cases where the condition is that which has been called "septicæmia," a putrid poison being absorbed into the blood. In these instances there is not time for the development of the characteristic anatomical changes; the morbid condition in the lungs often not advancing beyond the stage of congestion.

Dr. Coates asked if pyæmia was not more frequent and destructive among those whose health was already broken down, and who were crowded together, as in military hospitals.

Dr. Ashhurst replied that such was not his experience; the most rapidly fatal cases which he had seen had been among labouring men with every appearance of robust health. It was, he thought, found by hospital surgeons that pyæmia was most apt to occur after primary operations for injury; the patients in such cases being usually healthy. Patients previously worn down, and who had undergone secondary operations, might die from various depressing conditions, pyæmia being one; but it was at least not more frequent in such cases than in those of primary operation for traumatic causes.

Dr. Bache said: In the summer of 1852, a young man of healthy appearance, having a gunshot wound of the left hand, was admitted into the Pennsylvania Hospital. The injury was a severe one, the hand being much torn; nevertheless, an attempt was made to save it. Subsequently hemorrhage occurred, to arrest which pressure at the wrist was tried ineffectually. Then the radial artery was tied; after this, as the hand sloughed, the arm was amputated above the wrist. For a time the patient appeared to do well; then the pulse became rapid, pains in the joints with redness set in, and the case terminated fatally in about ten days. Death was attributed to rheumatism caused by damp floors, as the ward had been scrubbed about the time inflammation of the joints was first noticed. From what we now know, I have no doubt that this case was, in fact, one of acute pyæmia.

*Chloral in Asthmatic Bronchitis.*—Dr. Caspar Morris said: I was recently in attendance upon a lady who suffers from frequently recurring attacks of bronchitis, with asthma. The skin was hot, the frequency and difficulty of respiration very great, the râles loud and musical, and the

secretion very profuse, so that the mucus could be poured from the cup in an abundant, ropy stream. My attention had been arrested by the account, recently published, of the hydrate of chloral, and as she had not been relieved by any remedy which I had previously tried, except to a slight degree by chloric ether, it occurred to me that the chloral might be of service. I ordered five grains in one fluidrachm of the syrup of lactucarium of Aubergier, to be repeated in two hours if required. The two doses afforded entire relief; and she has found great comfort since from a single dose taken at bedtime; a good night's rest being secured by it. I mention it as a valuable aid in the treatment of this intractable and distressing disease.

1870, *Feb.* 2. *Report on Meteorology and Epidemics.* W. L. Wells, M. D., read the following report:—

In 1869 there were reported at the Board of Health in Philadelphia 14,786 deaths; 93 more than in the preceding year, and 853 more than in 1867; less, however, than in any one of the five years preceding 1867.

Taking the population at 800,000, this makes one death in 54.1, or 1.84 per cent. of the total population, a proportion which compares very favourably with other cities whether in this country or in Europe.

The deaths among males amounted to 7644; among females to 7142; 3370 were males over 20 years of age; 4274 were male children; 3313 were females over 20; 3829 were female children—making 6683 adults and 8103 children. 813 were people of colour.

The number above given as the total includes the stillborn—789—and those who died in the country and were buried in the city, 569 in number. On deducting these we have remaining as the deaths in the city, 13,428, one death in 59.6, or 1.67 per cent.

On comparing the different months we find that, as is always the case, July shows most deaths, although as compared with the year before, when July was very hot, there was a diminished mortality; 1900 died in July, 1868, and only 1710 in 1869. On the other hand, August was in the past year nearly as hot as July; the average temperature of the month being equal to the average of July for forty-five years. We find accordingly 1654 deaths in August, 1869, nearly equal to those in July, and exceeding by 84, August of the year before, when 1570 only died.

In September of the past year, the mortality had diminished so much that the whole number of deaths was not equal to those among minors alone the month before, and not equal to the deaths among children under five years of age in July. September was the healthiest month in the whole year. There were only 994 deaths.

March was remarkably wet and cold, and showed an increased mortality; April, on the other hand, was warmer by 2½ degrees Fahr., and dryer than the average, and showed a diminished mortality. In March nearly 300 more, and in April nearly 200 less died than in 1868. In November and December, the mortality was in each case about 200 greater than in the year before.

In 1869 there were 457 stillborn males, and only 332 stillborn females; and this excess in the mortality of male children at birth continues for several years, reducing their proportionate excess in number at birth, until at the period between 10 and 15 the females are more numerous than the males, and so continue, the difference constantly increasing,

until between 80 and 90, there appear by the last census reports 1006 females to 518 males; and between 90 and 100, 134 females to 51 males.

On comparing the deaths at different ages with each other, and with the population at the corresponding periods, according to the census reports, we are met by various circumstances which render it difficult to attain to accuracy. Some of these were mentioned in the last report made to the College on this subject. Another and not the least imperfection in the census reports, originates, it would appear, from the desire of many women to be considered young; for to this cause chiefly must be ascribed the fact that there appear on the census reports of 1860 for Philadelphia, more than 200 more females between 15 and 20 than between 10 and 15, and nearly 5000 more between the ages of 20 and 30 than between 10 and 20. Between the ages of 40 and 50 there are still traces of the operation of this cause, but they show themselves in the opposite way. The number of women between those ages is very small, if we are to believe the census, less than the number of men; and reduced to an extent for which the mortality at that period of life hardly begins to account. Beyond the age of 50 the women again are more numerous than the men; although here the action of this cause has probably ceased, as after 50 there is probably no more, or comparatively very little more desire to be thought young.

It is only in comparing the deaths with the *census reports* for the different periods that this particular cause need be taken into consideration; it has of course no influence on the report of deaths at the Board of Health.

In Philadelphia in 1869 the greatest mortality among children under 1 year, was in July, viz., 757, and next in August, 575. May was the healthiest month for them, as only 229 died, less than one-third of the deaths in July. The total deaths under 1 year were 3535, 825 of them from diseases of the stomach and bowels, a smaller number then usual.

Among children between 1 and 2 most died in August, viz., 220, and next in July, 188. After this age the influence of cholera infantum is scarcely felt, as the mortality between 2 and 5 years was greater than either in July or August in four different months, viz., December, November, June, and March. In December, when most died, 61, or not far from half the 150 deaths between those ages, were caused by scarlatina. The deaths from scarlatina in children between 2 and 5 in the whole year were 411, about one-third of 1292, the total mortality between those ages.

Croup was more fatal, in proportion to deaths from other causes, at this than at any other period, causing 122 deaths, retaining the full severity which it possessed between the ages of 1 and 2, when 55 died, while the deaths from almost every other disease which prevailed between 1 and 2, except scarlatina, had diminished in number.

Diphtheria was also most fatal between the ages of 1 and 5, causing 93 deaths, the total number from that cause being 182.

Between the ages of 5 and 10 scarlatina caused 179 of the 562 deaths.

Between 10 and 15, December showed the greatest mortality, June coming next. Between these ages the diseases which previously have decimated children again and again, have lost their power, while the diseases which subsequently prove so fatal are seen just beginning. Enteric fever makes its appearance, causing 32 deaths, more than from any other one cause, and tuberculosis having ceased to attack so fre-

quently the abdominal viscera, first shows a serious disposition to transfer its attention to the lungs; 26 died of phthisis. Next to these two diseases come disease of the heart and scarlatina, which each caused 22 deaths. The total deaths between 10 and 15 were only 260, showing that this period is the healthiest of a man's whole existence.

Between 15 and 20 the total deaths were 332, 43 of them in December, the most unhealthy month for that age last year. Phthisis caused most deaths, 151, only 15 less than half of the whole number; next came enteric fever, 40; next disease of the heart, 34; and then pneumonia, 21.

Between 20 and 30 years the total deaths were 1408, 628 of them (again not far from half of the whole number) caused by phthisis, which at this period shows its full power. Enteric fever comes next, causing 119 deaths, this disease also showing its full power at this period. Pneumonia and disease of the heart follow, causing 52 and 51 deaths respectively.

Between 30 and 40 the deaths were 1251; in numbers a slight decrease, although relatively to the number alive at that period a slight increase over the preceding ten years. Phthisis pulmonalis caused 475; then came disease of the heart, 62; pneumonia, 57; and enteric fever, 44. This last disease after this diminishes in force while the two preceding go on increasing.

Between 40 and 50 the total mortality was 1020; from phthisis 289, not much more than a quarter of the whole; disease of the heart, 59, and pneumonia, 57; cancer comes next, 47. This last disease here first comes into prominence.

Between 50 and 60 the total mortality was 882; from phthisis, 163, less than one-fifth of the whole. Next come disease of the heart, 74; pneumonia, 61, and cancer, 59; precisely the same order as in the ten years preceding.

Between 60 and 70 the total mortality was 896; more actually, and of course far more proportionally, than in the former period. Phthisis here for the last time shows its pre-eminence, causing 103 deaths, less than one-eighth of the total mortality; it has thus reigned supreme from 15 to 70. Disease of the heart caused 73; pneumonia, 71, and cancer, 56 deaths, again the same order as before. Next to these come paralysis, causing 48, and apoplexy causing 47 deaths; the first time that these become very important. 85 deaths in this period are ascribed to debility—a rather uncertain term—and 8 to old age.

Between 70 and 80, 199 deaths are ascribed to old age, and only 4 to debility. These two names are evidently used to denote the same pathological condition, both indicating in most instances the fact that it has been not so much the severity of the disease as the weakness of the constitution—its being worn out, and unable to withstand even a slight attack—which has produced a fatal result. Still, of course, it is an imperfection to use such terms, and they serve only to cloak the ignorance of the writer of the certificate.

The total deaths between 70 and 80 were 742; a little more than half those between 20 and 30; but when considered in reference to the proportion between those alive at 20, and those alive at 70, three times as many. Paralysis caused 55, and apoplexy 32 deaths, together, 87. Disease of the heart caused 62, and pneumonia 49.

The total deaths between 80 and 90 were 402; 211 from old age; 40

from paralysis and apoplexy; 15 from disease of the heart, and 15 from pneumonia.

Between 90 and 100 old age caused 55 of the 76 deaths, and between 100 and 110 all the deaths, 6 in number, are ascribed to the same cause.

The only epidemic which attained unusual proportions in 1869 was one of scarlatina. This is a disease which appears to have been gradually making progress in this city; as, from 1807 to 1818 there were in all only 13 deaths; from 1818 to 1830, 149; since then, a varying but persistant increase has taken place.

The greatest mortality from this cause was in the month of December, when there were 111 deaths. The disease had previously attained considerable prevalence in June, when there were 84 deaths, but it then declined, and in September there were only 40 deaths; less than in any other month in the year; after which it again rapidly and alarmingly increased in severity. The total mortality from scarlatina in 1869 was 799.

Enteric fever caused in 1869, 383 deaths, to 395 the year before. This disease has been gradually declining ever since 1865, when it caused 773, or nearly three times as many deaths as in the past year.

Typhus and the other low forms of fever, including cerebro-spinal meningitis and malignant fever, caused 88 deaths, hardly a tenth part of those they caused in 1864, since which time they have been gradually declining.

Rubeola caused 85 deaths only, also a diminution from the few preceding years. This disease caused 221 deaths in 1866.

There were in 1869, 50 deaths from the various malarial fevers; here again we have a reduction as compared with the six preceding years. In 1864 there were 77 deaths reported as caused by congestive fever alone.

The deaths from variola in 1869 only amounted in the whole year to 6, 2 males and 4 females—the males being both between 30 and 40 years of age, and the females, all four, under 2 years. Even this small number, however, was an increase over the preceding year, when there was only a single death from this cause.

There were in 1869 no deaths from yellow fever, the only case reported to the Board of Health having died elsewhere and the body having been brought here for interment.

Nine cases of death from cholera were reported in 1869.

The total mortality from phthisis in 1869 was 1975, 20 less than in 1868; 982 were males and 993 females. In March most died from this cause, viz., 215; next, in the months immediately preceding and succeeding, viz., 187 in April and 185 in February. The least mortality was in September, viz., 123, and next in October, viz., 132. There is, however, no rule in reference to this, as, for example, in 1866, October, instead of being the month with nearly the least mortality, was that in which there was next to the greatest, January having the greatest; and on going further back we find a year (1858) in which September (which eleven years later had the *least*) had the *greatest* mortality.

From diseases of the respiratory system (not including phthisis) there were 1296 deaths.

From diseases of the circulatory system, 587; a slight increase over the preceding year.

From diseases of the nervous system, 1985; a diminution from the preceding year, when 2124 died from this cause.

From diseases of the digestive system there were 2064 deaths.

The meteorological observations on which the present report is founded were taken by Dr. Conrad, at the Pennsylvania Hospital, and are entirely reliable.

The mean temperature of 1869 was 54.75 Fahr., 1.25 degrees above the mean of 45 years. The only months which were colder than usual were one of the spring (March), and two of the autumn (October and November). July varied less than any other from the average, only $\frac{1}{4}$ degree, while August was 2.70 above the average, making it nearly as warm as July. January varied most from the general average of the month, being 5.32 degrees above it; the warmest January except two in 45 years. February was 4.58 degrees above the average. November, on the other hand, was 3.25 degrees below the average, being the coldest November since 1848, and only 4 degrees warmer than December. The early part of March was very cold, the average until the 24th being below that of February.

The highest point which the thermometer reached in the year was 97.5, on July 16th. There were, accordingly, not many cases of sunstroke—only 12 in the year.

49.86 inches of rain fell in 1869, 4 inches more than the average—April, July, August, and September being the only months in which it was dryer than usual. August and the few weeks immediately preceding and succeeding were especially dry, causing great injury to the autumn crops.

On October 2 the rain fell in torrents all the afternoon and evening, and this was the case over the whole valley of the Schuylkill, so that the next day there was the greatest freshet ever known here, the water being $11\frac{1}{2}$ feet deep on the breast of the dam at Fairmount. The freshet extended from Maine to Virginia.

On the 1st of January, 1869, there was a storm of rain and sleet, and the ice formed so thickly on the trees that many branches were broken by the weight, and the roads in some places were obstructed.

On the 15th of April there was an aurora borealis, which has rarely, if ever, been paralleled here. Telegraphic despatches could be sent by the aid of it alone.

June 27th there was a tornado in the lower part of the city, which did a great deal of damage, even blowing down some houses.

On the 22d of October there was an earthquake in New Brunswick and Nova Scotia, severe enough to overthrow chimneys and do slight damage in other ways, and extending, in a less degree, to the neighbouring parts of the United States. Although it was not felt here, it may be mentioned as the one which has approached us more nearly than any other.

Some tables prepared to accompany this report are unavoidably omitted.

1870. *Feb.* 16. *Compound Fracture of the Skull with Aphasia.*—Dr. Addinell Hewson exhibited the specimen and read the following account of the case:—

J. T., æt. 23, waiter, single, coloured, admitted to the Pennsylvania Hospital February 11, 1870. At 5 o'clock this morning received a blow from a heavy water pitcher, which produced a somewhat eccentric wound of scalp, about two inches in length, above and slightly in advance of the left parietal boss, and a depressed fracture of the skull beneath. The depression is equal to the thickness of the bone. The patient, although

carried to the hospital, walked into the ward, and when first seen was sitting in a chair. Shaved before admission; very little hemorrhage from wound; mind clear; expression anxious; no paralysis of the tongue or limbs; perfect aphasia; gave intelligent replies to questions by signs, but was utterly unable to speak, except a drawling attempt to say, "Yes, sir." Respirations slow; pupils normal; hearing unaffected; no hemorrhage from the ear. No other injury discovered.

Ether at once administered; scalp turned out of the way by elongating the wound, and crossing it by an incision at right angles; a portion of bone removed by trephine, and the depressed portion elevated to its proper line. An effort was made to preserve the periosteum; two small arterial branches were controlled by seraphines, and a larger branch of the temporal by an acupressure pin.

*Four hours after the operation.*—Seraphines removed, and a dressing of gauze and collodion applied, with a water dressing over all. Patient still unable to speak; condition much the same; dorsal decubitus. Pulse 61; respiration 22. Ordered pil. hydr. gr. vj, to be followed in the morning by Rochelle salt ℥ss.

12*th.* Since the operation has been very restless; is very easily aroused; has some difficulty in protruding tongue; no change in pupils; aphasia continues; some slight venous oozing from the wound. Bowels not been moved; ordered a turpentine injection. Pin removed. Pulse 77; respiration 16.

13*th.* Bowels freely moved early this morning; passed urine and feces in bed, probably because he was unable to call nurse to his aid. There does not seem to be any paralysis of the sphincters. Can arouse him by speaking in a loud tone; he appears to understand, but makes no attempt to answer. Last evening dry earth was used in place of the water dressing. Earth has been removed, crusts not. Very restless; disposed to lie on left side. Pulse 80; respiration 20; somewhat stertorous.

14*th.* Some puffiness around the wound; a poultice applied to venous crusts. At noon all dressings removed, and wet cloths applied; stupor more marked; can detect no paralysis; tongue heavily furred. A.M. Pulse 80; respiration 24. P.M. Pulse 118; respiration 32; temperature in either armpit 105°. Some puffiness of cheek; breathing stertorous; almost if not complete unconsciousness; pupils respond to stimulus of light, left more dilated than right; eyes open.

15*th.* 6 A.M. Death without convulsion.

*Autopsy nine hours afterwards.* — Cadaveric rigidity slight; some clotted blood beneath scalp. A short distance below the point of trephining the fracture is found to be stellate. Two branches extend downwards; one posteriorly to mastoid process, where it turns forwards to involve base of petrous portion of temporal; the other anteriorly through squamous portion into middle fossa of the skull, towards point of lesser wing of the sphenoid, which it does not, however, implicate. This fracture ruptured the middle meningeal artery at the point at which it crosses it. At this point on the external surface of the dura mater is a large, flat, partially broken-down clot, two inches in diameter. Beneath dura mater left hemisphere is covered, with exception of its posterior fourth, with pus. There is a well-marked but shallow depression in the surface of the brain an inch and a half long and parallel to brain's axis, immediately beneath the point where the bone was most depressed by the blow. Right hemisphere presents nothing abnormal, except an apparent flattening of the

convolutions opposite the seat of injury. No hemorrhage at the base, or in the substance of the brain itself, to explain the aphasia; nor could any alteration of the cerebral structure be detected by the microscope.

The point of special interest in this case, and which has induced me to present its history to the College, is the aphasia. This symptom, as I understood from those who accompanied the man to the hospital, developed itself immediately after the infliction of the blow which fractured the skull. Up to the moment of the injury he had been in the enjoyment of perfect health; had never manifested any brain trouble, so that the loss of speech was directly due to the injury. The wound on the scalp and the point of depression in the skull were not in the position to explain, by the idea of direct compression, the existence of this symptom, according to what is generally taught of the location of the faculty. The absence of hemorrhage through the opening made by the trephine, or of its existence under the dura mater, of hemiplegia, of deafness and of bleeding from the ears, ignored, at the time of the operation, the notion of any lesion of moment beyond that of the direct wound. The persistence of this symptom after I had elevated the portion of depressed bone, showed clearly that it was not due to that circumstance.

The clot was evidently the source of the pressure in this case, and its position on the external surface of the dura mater, and at the side of the brain, rather precludes the notion of Voisin that the faculty of speech is located in the gray matter of the left island of Reil, and also that of Broca that it is in the inferior portion of the third frontal convolution of the left hemisphere, for the pressure which it could have exerted through the brain substance at either of these points must have been very trifling. The case could, however, be used to support Dax's (père) rather indefinite idea of the faculty being located in the half hemisphere, or even Bouillaud's still more vague theory, for which he has offered five hundred francs for a case to controvert, that it is in the anterior lobes of both hemispheres, for the right hemisphere was evidently crowded over in its anterior portion on to its side of the skull. The occurrence of the essential lesions in this case, on the left side, is in accordance with what has been most constantly observed; and in this connection the fact pointed out by Gratiolet, of the development of the left hemisphere being in advance of the right is of some importance. So is also the fact of this man having been a negro, for the same high authority has shown that in the Caucasian race the anterior fontanelle is the last to ossify in order to permit of the greatest possible development to the frontal lobes, whereas in the Ethiopian race the converse condition exists, the posterior fontanelle is the last to ossify, hence the receding forehead and the well-developed occiput in the negro; and we may have some explanation of the symptoms being so much more marked in this instance than what I am sure many here have seen arise in the white man from the same extent of lesion.

*March* 16. *Ulcero-Membranous Angina.*—Dr. J. M. Da Costa read the following paper:—

There is at present prevailing in the city a form of sore throat which seems to me to present features worthy of study. I shall endeavour to describe these features from ten cases, eight of which occurred in my own practice.

The complaint begins with a chill, followed by fever and the ordi-

nary manifestations of angina. But on looking into the throat we find, within twenty-four hours of the outbreak of the malady, on the tonsils, small spots covered with a yellowish exudation, and on inspecting them closely we perceive them limited to the follicles of the glands, one tonsil being more affected than the other, but both sharing in the disorder. Each is red and swollen, and the redness extends to the half arches and palate; the back wall of the pharynx, too, is in some cases implicated, and its follicles may be red and prominent. But beyond the yellowish exudation mentioned, there is nowhere any sign of deposit, nor does any appear as the case progresses. Shortly after the throat affection is manifest, or at the same time with it, a marked enlargement of the glands of the neck takes place; the submaxillaries and the chain of glands connected with them become painful, prominent, and hard, generally much more so on one side than the other. Coincident with the glandular swelling we are struck with the prostration of the patient—a prostration great, apparently unaccountable, and out of all proportion to the sore throat. The fever, which never runs high, which never, therefore, shows much acceleration of pulse or heat of surface, remits in the morning, exacerbates in the evening, and soon gives way to a moist rather cool skin, and to pallor of the countenance. There is from the onset utter loss of appetite, with a heavily coated tongue, sometimes with nausea and vomiting, and occasionally with slight diarrhœa. After three or four days the little yellow marks begin to disappear, and we find where they have been, raw spots, as if from superficial ulceration. The enlarged chain of glands commences to subside, but the hardness remains for a number of days after the throat has an almost natural look. The patient is now out of bed, and to all appearances fairly convalescent, very weak and wretched, but without active throat trouble. He has arrived at this condition from the 6th to the 9th day of his sickness; in milder cases sooner. But does he now get well? Not always. A relapse is very prone to happen. It occurred in four out of the ten cases, and in one of these twice. I shall briefly describe this case:—

C. M., aged 6, had a light form of this angina, lasting three days; then convalesced, and remained well a few days, when she was again seized with a sore throat and glandular enlargement. The attending debility was so great that she fainted on attempting to rise from bed. The second attack lasted about four days, and all appearance of sore throat passed away. But in a few days more she had as in the previous invasions, a chill, slight febrile excitement returned, the glands of the neck were again very much swollen, and the follicles on the tonsils, as at first, covered with little yellowish masses. Her tongue was heavily coated, and the prostration very decided. Indeed she was herself so conscious of her weakness that she gladly remained in bed; for an attempt, even after she appeared nearly well, to get at her playthings led to a fainting spell, and to subsequent positive distaste for the previously coveted toys. The third attack was of six days' duration, and left the glands of the neck swollen; at its termination, large fever blisters appeared on the lips and cheek.

The sister of this little girl, 11 years of age, had also a relapse. In her case the affection of the follicles of the tonsils was very marked, and there was considerable loss of substance after the ulceration was manifest. The glandular swelling was very great and painful, lasted for two weeks, and finally involved the right parotid, thus giving rise to a secon-

dary parotitis; this henceforth with the suppurating cervical glands formed the leading feature of the case, and a tedious and protracted convalescence ensued.

Tumefaction of the glands of the neck is then a prominent trait of the malady. In truth it is never absent, occasions much discomfort, and is at times associated with sharp shooting pain, passing to the angle of the jaw. The glandular swelling is double-sided, yet generally much more marked on the side on which the affection of the tonsils is most decided. The enlargement of the glands is confined to the neck. I have looked in vain for prominence of lymphatic glands in other parts of the body.

The secretions in this angina are much influenced. I have already spoken of the heavily furred tongue. It remains furred throughout the attack, and then cleans from the edges; the follicles are in places seen as prominent points, surrounded by the deep coating. As regards the urinary secretion it is apt to be scanty at first and high coloured, then increases and becomes pale. I have tested for albumen in several cases, both early in the malady and at its decline, but have not found this abnormal ingredient. The only exception was in the case of great glandular swelling just alluded to. Here when the sore throat had nearly terminated, and the glandular swelling was marked, an extremely slight opalescence was noticed on boiling the urine and adding nitric acid; as the glandular swelling became enormous and involved the parotid, albumen appeared in decided quantities. But this case was the worst I have encountered, and the depression and signs of blood-poisoning were those of a malignant sore throat.

The disorder I am discussing is pre-eminently a disease of children or of young adults. The youngest of my patients was three years of age; the eldest, twenty-five. It is, I think, contagious. Four cases occurred successively among the children of one household; three others, among young adults of another. And Dr. Herbert Norris informs me of eighteen cases that happened mostly at the Orphan's Asylum, which I recognize from his description to have been the same disease. True, the argument against the supposed contagion might be that the cases were all equally exposed to the epidemic influence, but members of the same family being seized one after the other, and sometimes a week apart, is greatly against this view of the subject.

Good general health does not confer immunity, for some of my cases happened in the most robust subjects. Nor does the previous occurrence of scarlet fever exempt, since nearly all of my patients had had scarlet fever; four of them I attended for this disorder about a year ago.

Looking now at the distinguishing features of the sore throat, we find it unlike ordinary tonsillitis in involving so uniformly both tonsils and inflaming the parts around, though not blocking up the throat so completely; unlike, in the existence of a follicular exudation and subsequent small points of ulceration rather than of the creamy streaks and suppuration with marked loss of substance of quinsy; unlike, in the absence of much difficulty in swallowing, in the early and extensive implication of the cervical glands; unlike, further in the slight fever, in the great prostration. We encounter, it is true, in some cases of tonsillitis, whitish spots on the inflamed gland, but these exudations or discharges from the crypts are not associated with ulceration, and the whole character of the case is so different.

But the most interesting point in connection with this angina is *its dis-*

*tinctions from diphtheria*, I mean from that malignant disease which we ordinarily describe as diphtheritic sore throat. I admit at once that in isolated cases, or where we are unacquainted with the epidemic tendency, such a distinction may be with great difficulty arrived at, may, indeed, not be possible. But when we see cases in which the disorder is limited, and particularly to the tonsils; in which the exudation shows no spreading tendency; in which superficial ulcerations happen; in which a chill and febrile excitement and nausea and vomiting mark an abrupt beginning; and in which, though sick and prostrate, the patient always recovers—we have cases before us very dissimilar to the dangerous disease of insidious approach, of constant tendency to extension, of so often swiftly destroying character.

Let us leave, however, the merely distinctive clinical features for other considerations. Is not, perhaps, the disease I am endeavouring to describe after all in its nature diphtheria? Do we not find prostration, out of proportion to the local lesions, and signs of blood-poisoning, as we do in diphtheria? We do find these signs, and they suggest strong analogy, suggest, I believe, relationship, but not identity. How else account for the fact that in not one of my cases regular diphtheria with its spreading formations occurred, notwithstanding, as I have already stated, that in many instances the disorder propagated itself so distinctly by contagion? And the same fact was noticeable in Dr. Norris' cases; the ulcero-membranous sore throat, to call it by this name, produced only ulcero-membranous sore throat.

This disease then may be kindred to diphtheria, but it is not diphtheria, and is the result of a special and milder poison. It is very likely that some of the membranous sore throats dwelt on by the older authors were of this kind, though all their descriptions, it is the fashion of the day, to dismiss contemptuously as imperfect descriptions of the one disease, diphtheria. The cases from which I have drawn my conclusions may be perhaps identified with some of follicular diphtheritis which have been recently reported; still more certainly with the malady named by Gubler, "herpès guttural," but which Trousseau delineates far better under the term of common membranous sore throat—a term previously used by Bretonneau, who, though recognizing what I suppose to have been the same disease, describes it but very imperfectly, making, however, a statement that shows him not to have thought it diphtheria, namely, that of all affections it is the most difficult to distinguish at the commencement from diphtheritic angina.

As regards the treatment employed in my cases it consisted locally, of gargles of chlorate of potassa and claret, and of sage tea and alum; internally, I gave at first remedies to act slightly on the skin and allay the nausea; soon, however, in all but the mildest instances of the disorder, followed by iron, preferably used as the tincture of chloride in combination with acetate of ammonia. Quinine also was resorted to, but it did not ward off the relapse in the case in which it was most freely employed. Milk and nourishing broths were ordered in considerable quantities from the beginning, or rather as soon as the stomach tolerated them well, and this free nutrition was often aided by small quantities of stimulants as the malady advanced; large quantities were never necessary and never given. Poultices around the throat offered decided relief where the swelling of the cervical glands was marked, and many of the little sufferers went quietly to sleep under their soothing influence.

*Chronic Laryngitis, presumably Syphilitic; Asphyxia; Tracheotomy. Complete Cure with Restoration of Voice.*—Dr. William Pepper read the following history of the case with remarks :—

C. Y., æt. 38, native of Holland, married, of temperate habits, and had followed the sea from his youth, was admitted to the Pennsylvania Hospital January 9, 1865. Fifteen years previously he had contracted syphilis, but, with the exception of repeated attacks of sore throat, has never presented secondary symptoms. Has never infected his wife. Has three perfectly healthy children. No hereditary predisposition to tuberculosis. Was always healthy until 1861, when he had a bad attack of sore throat, with severe cough and thick mucoid sputa. Was treated by cauterization of the throat and recovered in fourteen days. Five months afterwards he had a second attack of sore throat, attended with great dyspnœa and dysphagia, from which he again entirely recovered. Fourteen months afterwards he had a third, but more mild, attack of sore throat. In February, 1865, his throat again becoming sore he went immediately to the coast of Cuba. The disease increased, however, and he began to suffer much from dyspnœa and aphonia, with pain and soreness in the larynx.

On admission, he was ordered ammonia carb. gr. vj, syr. senegæ f℥ss q. s. h. The posterior wall of the pharynx presented several dense, white cicatrices. Laryngoscopy was attempted, but it was impossible to get a clear view of the larynx owing to the thick mucus which continually rose from it. There were no physical signs of tuberculous disease of the lungs.

*July* 10. After several weeks his voice became better, and the spells of dyspnœa less frequent and severe. The improvement, however, was transient, and he soon had several spells of spasmodic dyspnœa, which almost called for tracheotomy. He was put upon the use of large doses of iodide of potassium; blisters were applied over larynx, and he was directed to use warm inhalations.

*August* 7. Ordered ol. morruhæ f℥ss t. d., and hydrarg. bichlorid. gr. $\frac{1}{16}$th was added to each dose of the iodide of potassium. The inspirations were very stridulous and laboured, his voice almost lost, and the dyspnœa extreme. Some relief was obtained from the internal use of ether. Has lost flesh, and has hectic fever at night.

*September* 4. The dyspnœa increased so frightfully during the past twenty-four hours, the surface becoming livid and the extremities cold, that it was decided to perform tracheotomy. On entering the ward to operate, he was unconscious, with barely perceptible respiration. The face and extremities were cold. I immediately performed tracheotomy, but, before the operation could be concluded, breathing had entirely ceased, the head fell back, and the lower jaw dropped, the heart, however, continuing to beat very feebly. The tracheal tube was hastily introduced, and artificial respiration (by Marshall Hall's method) was resorted to, and aq. ammoniæ fort. held before the nose. For some time it seemed impossible to rouse the nerve centres, but gradually the capillary circulation improved, large quantities of tough bloody mucus were discharged through the tube, and by the end of forty-five minutes he could be roused so as to breathe voluntarily, although he constantly tended to fall asleep. Whiskey was freely administered so soon as he could swallow, and in an hour and a quarter, respiration was being carried on quite naturally. The incision commenced a half-inch above notch of sternum, and embraced two tracheal rings.

For some days there was very little inflammation about the incision. His respirations were easier than for several months, and his power of deglutition became much better than before the operation. He again slept quietly, and was able to walk about without any difficulty, and gained flesh and strength daily. Ordered syr. ferri iodidi f℥ss t. d. p. c.

14*th* Found early in the morning suffering with extreme dyspnœa, and breathing hastily with a hissing sound. The tube had slipped out of position, and was therefore immediately removed. Even then, however, the respiration was very imperfect and difficult, the face became livid, and a marked tendency to drowsiness showed itself. On attempting to re-introduce the canula, it was found to readily enter the opening in the trachea, but could not be forced downwards at all. A stricture was found, less than an inch below the tracheal opening, through which the smooth rounded end of a small silver catheter could barely be passed. Gradual dilatation was effected by graduated catheters until he was able to wear one with an eye large enough to carry on respiration through. Later in the day, Dr. William Hunt extended the external incision upwards about an inch, cut out a small piece from each edge of the trachea, and then endeavoured, by a curved bistoury, to nick the constriction. This was partially successful, but the ordinary canula still could not be introduced, and he was obliged to wear a canula formed of the lower end of a large silver catheter with the eye much enlarged, with wire rings soldered on either side to allow it to be secured in place by a tape passing around the neck.

*October* 4. For some days after the above operation he was unable to swallow anything but liquids, but he is again gaining the power of deglutition. External wound filling up rapidly; still wears the catheter. Is again up and walking about, and has gained some flesh and strength.

21*st*. Dilatation of the tracheal stricture has been steadily persevered in by means of flexible bougies, and a large canula has been passed by means of a *plunger* with a smooth conical end. This was readily passed through the stricture, and worn with ease. A remarkable improvement has taken place in the last two weeks; he has gained greatly both in flesh and strength; is able to swallow without difficulty, and by closing tube with his fingers can speak with some force, though huskily. An inner canula, accurately fitting the first, and with a straight projection anteriorly so as to carry the sputa clear of the neck, has been introduced, and he left hospital to commence his trade of a sail maker. Ordered to continue syr. ferri iodidi f℥ss t. d.

During the cold damp winter weather he suffered considerably from bronchial irritation and dyspnœa, and about February there were indications of the laryngeal disease progressing, as he began to experience great trouble in swallowing, from the entrance of fluids and solids into the larynx. He suffered violent spells of coughing during meals, so that it took him hours to eat a dinner. At the same time he emaciated and lost strength. The tube never created any irritation. These symptoms subsided, and when next seen, May 24, 1866, he was much improved in appearance; had gained flesh and strength; breathing slow, regular, and easy; and by closing the tube he was able to speak quite plainly, so as to be readily heard across the street. Expectoration had almost entirely ceased. The tube did not cause the slightest irritation. There has been no necrosis of the tracheal rings.

He was seen again February 14, 1869. During the last thirty-three

months he has continued in excellent health, and is now a very vigorous and robust man. He has worked steadily at erecting high scaffoldings. Expectoration has entirely ceased; never suffers from catarrh, though exposed to all kinds of weather. Still wears the tube all day, enveloping the throat in a thick woollen scarf. At night, however, he removes the canula and sleeps without it. He never experiences the slightest difficulty or irritation in thus frequently removing it. By closing the orifice of the canula he can now speak in a clear and loud voice.

*Remarks.*—The first point of interest in this case is the determination of the nature of the laryngeal affection. The history of primary syphilis was perfectly clear, but a period of eleven years followed the infection, during which no secondary symptoms whatever manifested themselves. Subsequently, however, the patient suffered from repeated attacks of ulcerated disease of the pharynx with laryngitis; and the character and results of these attacks agree so entirely with those of an undoubtedly syphilitic nature, that it seems altogether probable that such was their character in the present instance. At one time the marked emaciation and hectic fever led to the suspicion of tuberculous disease, but this idea was rejected on account of the age of the patient, the absence of hereditary tendency, the evidences of severe ulceration of the pharynx, and the absence of any physical signs of pulmonary disease.

It is to be regretted that the operation of tracheotomy was postponed until so late, but this postponement afforded an unusual opportunity for testing the power of artificial respiration in the resuscitation of asphyxiated patients. In point of fact, the patient may be said to have been dead, so far as the brain and lungs were concerned, though the heart still continued to contract slowly, feebly, and ineffectually. The mere effect of the operation itself was purely negative, as all respiratory movements had entirely ceased, but it gave a chance for the employment of artificial respiration with complete success. The easy, free, and forcible entrance and exit of air through the tracheal tube in this case, as the movements of the trunk advised by Marshall Hall were performed, suggested the idea that tracheotomy might be resorted to to aid artificial respiration, even when there was no obstructive disease of the larynx It is probable that in many cases of profound asphyxia, the effects of any method of artificial respiration are seriously impaired owing to the difficulty of securing free admission for the air to the lungs. Apart from the fact that the nasal and buccal cavities may be more or less obstructed by mucus, the vocal cords are relaxed, and are apt to be approximated by the pressure of the entering column of air, so that the aperture of the glottis may be narrowed or even obstructed during the artificial inspiration. Should this difficulty be suspected in any case, it is to be remembered that the operation of tracheotomy requires but a moment to perform, that in itself it can scarcely be said to present any danger, and that it affords instantaneously a free, uniform, and certain mode of access for the atmospheric air to the lungs. It so rarely happens that we have an opportunity of learning the sensation connected with the act of dying, that I cannot forbear from alluding to the testimony of the patient on this point. For some time before he passed into a state of unconsciousness he had presented all the appearances of threatening asphyxia. His face was livid; the features distorted with the efforts at inspiration, and his expression most agonized and appealing; all the muscles of respiration were thrown into violent, almost convulsive, action, and the hands were

frequently put up to the throat as though to remove some obstacle. These symptoms disappeared as the state of asphyxia became profound; but I am sure that an ordinary observer would have said that he had died a most painful and horrible death. Some weeks afterwards when questioned carefully as to his sensations for some time preceding the operation, his only recollection of his feelings was conveyed in the expression "that he went gradually into a sweet sleep!"

The after-course of the case illustrates one of the dangers which must be guarded against, although it is impossible to say certainly whether the stricture of the trachea was due to disease which had existed before the performance of the operation, or had been caused by granulations developed by the irritation of the end of the canula. It is probable, however, that some antecedent ulceration of the trachea must have existed. The success which attended the dilatation of the stricture by graduated flexible bougies illustrates clearly the impunity with which lesions of the trachea can be treated after tracheotomy.

It is by no means an unusual thing for tracheotomy in syphilitic diseases of the larynx to be followed by the excellent results obtained in the present case. It may indeed seem surprising that the mere operation itself should induce a complete cure of the local disease of the larynx, and that the aphonia, dysphagia, and all signs of irritation about the part should so soon disappear. But it is, I believe, a fact that when once the larynx is placed at perfect rest by the admission of air through the new tracheal opening, the tendency in the majority of cases is to an arrest of the laryngeal disease, and to a return of the parts to as near their normal condition as the actual loss of substance from ulceration will allow. Undoubtedly this tendency is favoured by the continued employment of suitable internal treatment, and it is another of the great advantages of tracheotomy that it gives the opportunity of pursuing the use of anti-syphilitic remedies. Still another advantage that is gained by tracheotomy, in reference to the local disease, and which has been already alluded to, is the opportunity for using local applications to the seat of disease, and, in the event of finding obstruction of the trachea, for dilating the stricture by suitable instruments. So far as concerns the effects of the operation upon the general nutrition the benefit gained is incontestable. In the present case the patient had been using the same internal treatment before as after the operation, and yet, within a few days after the canula was first introduced, the mere admission of a free supply of oxygen to the lungs was sufficient to cause a change in his whole nutrition, and to lead to a rapid improvement in general appearance, and to an increase in both flesh and strength. It is certainly not surprising, when we reflect upon these positive advantages gained by the performance of tracheotomy in obstructive syphilitic disease of the larynx, that the idea should have presented itself of resorting to the operation not merely to save life from actually threatening asphyxia, but as a means of cure. In a valuable paper read before the Clinical Society of London by Mr. Thomas Bryant (*Trans. of Clin. Soc. of London*, vol. i., 1868, p. 127) upon "tracheotomy as a means of cure in chronic laryngeal disease," he says:—

"In too many instances operative interference is postponed to too late a period for even this result [the improvement of the local disease] to be obtained, the patient being frequently in a dying state before such an operation is demanded or thought justifiable; for it may be here stated that every patient with ulcerative disease of the larynx is not far from death's door, and that at any moment a laryngeal spasm may take place and destroy life. But in the

present day surgeons and physicians have only thought of tracheotomy as a last resource, as the means of warding off death when threatened from impending suffocation, and never in the light of a cure for the disease itself. I would wish them to look upon it in such an aspect, for I believe that we have in tracheotomy a valuable remedial agent in ulcerative laryngeal disease—syphilitic or otherwise—and that we have it in our power in many cases not only to save life by such an operation, but to preserve the larynx as an organ of voice and respiration."[1]

The present case is offered merely as an illustration of the actually curative effects of tracheotomy in ulcerative laryngeal disease, and consequently as a corroboration of the views of Mr. Bryant, above quoted. It illustrates further the fact that, even when the disease has reached its last stage and death is imminent from asphyxia, the operation should be performed, and may not only be followed by great prolongation of life, but by marked improvement in the local disease. It is however impossible to draw from such a result the inference that tracheotomy should be postponed until so late a period. This is forbidden both by the fact that such long delay is apt to be attended by irreparable injury to the larynx, and further, that when the degree of obstruction is considerable, there is always danger of sudden death from a suffocative attack before aid can be summoned and the operation performed. The operation is indicated therefore, whenever, in spite of constitutional treatment and of local applications, ulcerative disease of the larynx is advancing, and the symptoms of obstruction are increasing. There is already abundant evidence to show that when performed under such circumstances we may hope not only for an arrest of the disease, but in many cases for a restoration of the functions of the larynx. The time at which the canula can be removed will of course vary with the stage and extent of the laryngeal disease. As a general rule it may be said, however, that it should not be removed until the local disease has healed, and it has been found that respiration can be carried on through the larynx. In order to determine this latter point a canula may be employed having an opening upon the convexity of the tube, and with a sliding valve by which the external opening may be more or less reduced. In cases where it is necessary for the canula to be worn for a long time it should never, according to Bryant, be allowed to remain unchanged for more than three months. The present case furnishes an excellent illustration of the tolerance of its presence which is established, and of the impunity with which in some cases, the tube may be worn for years, and removed and re-introduced at the pleasure of the wearer.

*Acetic Ether as an Anæsthetic.*—Dr. H. C. Wood spoke of the prevalent dissatisfaction of the profession with our present anæsthetics and the consequent search, especially in London, for new ones. He thought that this search had perhaps been in a measure wrongly directed, since it had chiefly been among the chlorine compounds, many of which, if not all, are powerful depressants, and drew attention to the recent death from bichloride of methylene as an illustration of their dangers. He had therefore directed, himself, some thought to the ether series as probably all stimulants. He exhibited a specimen of acetic ether to the College, prepared for him by Mr. Chas. Bullock of this city, and stated that he had

[1] See also M. W. Trélat, on Tracheotomy in Syph. Lesions of Resp. Passages, in Arch. Gén. de Méd., Jan. 1869, p. 105.

not yet tried to fully anæsthetize the human subject and could not therefore say whether any practical use could be made of it. In pigeons and rabbits it produces perfect unconsciousness without nearly so much previous struggling as when ether is used. It is certainly much more agreeable, though apparently less active than that anæsthetic, having a peculiar pleasant odour, very closely resembling that of apples, which no doubt owe their smell to it or the closely allied—malic ether. An advantage which it has over sulphuric ether, especially for night use, is its comparative non-inflammability, connected partly with its lesser volatility. It seems impossible to light it through its vapour diffused in the air, and when set on fire its flame may be readily blown out, which it is well-known cannot be done with ether. A curious result of its high boiling point and slight volatility is that cotton saturated with it will remain for an hour or more sufficiently impregnated to produce anæsthesia in a pigeon. He had himself breathed the vapour, but not to the point of unconsciousness. The sensations produced were similar to those connected with the inhalation of ether, but he thought more pleasant. Dr. Wood then placed a pigeon under the influence of this anæsthetic. It passed gently and quickly into an insensible state, and again awoke without struggling after a few minutes of quiet sleep.

*Excision of a Portion of the Lower Jaw.* Dr. FORBES exhibited the patient and said :—

The case of the young woman now before the College is one of excision of one-half of the lower jaw-bone, with the exception of the condyle and coronoid process. The ablation was from the symphysis to the sigmoid notch on the left side.

The operation was performed just a year ago, and the woman is now in the enjoyment of excellent health. The sinking of the cheek is but little and the deformity is slight, as the Fellows of the College will observe only a very small linear cicatrix from my excision, extending from the inferior margin of the symphysis along the under surface of the body to the posterior aspect of the angle of the bone.

H. B., aged 23 years, unmarried ; works at a sewing machine ; came into the Episcopal Hospital on the 9th of February, 1869.

Three years previous to her entrance she had observed a lump on the lower part of the gum of the left side of the lower jaw which she attributed to some decayed teeth, but having the teeth removed the lump did not disappear—on the contrary, it soon got larger. It gave her but little pain, and grew slowly, when in September, 1868, she observed some "growths" coming up from the jaw where the teeth were formerly lodged and which had been removed nearly a year previous. Early in November, 1868, she went to the clinic of the University of Pennsylvania, and a portion of the tumour was removed through an incision extending along the inferior lateral surface of the bone. The wound healed, leaving an elevated line or cicatrix. Soon after this she entered the Episcopal Hospital, and when I came on duty in April the tumour was observed to be increasing. It had been three years in attaining its growth ; it was comparatively painless ; the tissues covering it remained healthy, though greatly distended ; the absence of all glandular disease and of all cachexia, and any tendency to ulceration ; its situation and the freedom from resentment of any injury, although a portion of it had been removed some months previous, all these points indicated its benign nature, and the

propriety of recommending its removal. Accordingly, at a consultation held the first week in May it was so decided. The patient was anxious for the operation, and it was at once performed.

Ether being administered the left inferior incisor tooth was removed, and an incision was made with a bistoury under the chin just behind the symphysis and the knife carried up close behind the bone on its concave aspect until it appeared behind the gap made by the drawn tooth; a chain saw was then passed up through this opening by means of an eyed probe armed with a ligature having the saw attached. The jaw-bone was then bisected at the symphysis, the tongue being held out of the way by means of a thread passed through its tip. An incision was then made from the under surface of the symphysis along the inferior border of the bone to the posterior aspect of the angle; the facial artery was cut and secured at both ends, the soft parts with as much of the periosteum as possible were elevated; a similar incision was made nearly parallel to this so as to include the rough linear cicatrix of the former operation, and the parts detached as rapidly as possible. The inferior dental nerve and artery where they enter the posterior dental foramen were severed and the artery secured. The chain saw was now passed around the middle of the ramus of the bone and the end near the symphysis grasped with a strong pair of forceps, was held by an assistant, and the section of the bone removed.

The gap thus made was large—six ligatures in all were applied and the general oozing arrested by bathing the part with equal parts of alcohol, laudanum, and water. The amount of blood lost was believed to be about four ounces. The lips of the wound were approximated and held by leaden wire, and the cavity packed through the mouth with pledgets of lint. A dressing of cerate was applied and sustained by a bandage, the ligatures being brought out of the angle of the mouth. The patient reacted well, and an anodyne being administered she was removed to the ward. The anodyne was repeated frequently, and she was sustained by liquid nourishment. The sutures were removed the third day; the ligatures came away in due time, and in four weeks she left the house well.

On examining the tumour it was found inclosed by the body of the bone, having distended its walls, particularly the outer one, until they had become exceedingly thin and destroyed in two places, as may be observed in the specimen in the bottle. Its boundary was well defined, though it was not in a capsule; its centre was soft and almost gelatinous, and of a grayish-white colour; and every part of it was easily broken up. On examination under the microscope, cells, angular and attenuated like caudate cells, having dotted contents, with nuclei and nucleoli, and free nucleoli, as observed by Mr. Paget in his description of myeloid tumours, were readily seen. With Mr. Paget, I prefer to believe, however, that the true nature of morbid growths generally is to be apprehended more correctly by examining them as living things, and modes of life rather than conditions of structure determine me in classifying them.

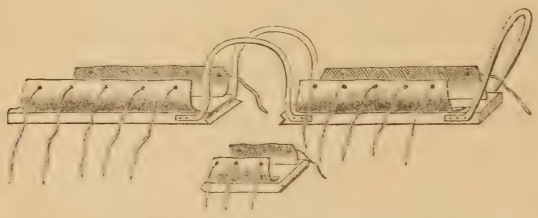
The tumour was evidently a myeloid one, the nature of which has been well described by Mr. Paget, and more recently by Mr. Christopher Heath in his excellent work on Injuries and Diseases of the Jaw, the Jacksonian Prize Essay of the Royal College of Surgeons of England published in 1868.

*April* 20.—Dr. Packard exhibited a splint devised by him, and successfully used, for keeping the lower limb at rest after excision of the

knee. A similar arrangement might be employed in cases of compound fracture.

The splint, for which accurate measurements should be taken in each case, consists of a wooden portion, upon which the entire limb rests; leathers are tacked on near its edges, to come up around the limb and give it lateral support, being laced together by tapes passed through eyelet holes. Additional steadiness may be given by the application of pasteboard splints to the upper surface of the limb.

The peculiarity of the apparatus, however, consists in the arrangement for changing the dressings without disturbance of the limb. A portion of the wooden splint is sawn out, opposite the knee or other desired point, and the parts above and below are strongly bracketed together; a slide is then adapted to the gap, as in the cut, so that, the limb lying perfectly undisturbed, the slide may be withdrawn, the dressings changed, and the slide replaced. (See figure )



An iron arch, screwed to the lower end of the splint, serves to protect the foot from pressure or lateral displacement; and by tying a piece of bandage between it and the brackets, a sort of tent-like arrangement is made so as to keep off the bedclothes from the limb.

By crossing the tapes attached to the leathers of the slide, and tying them to the brackets, a greater degree of lateral support may be given to the affected part. When used, the whole splint is of course carefully padded with folded flannel, or raw cotton, each portion separately.

The plan of this apparatus is so simple, that it may very possibly have suggested itself to other surgeons, although no published description of it has met my eye. I have indeed seen an account of a "bracketed" splint for the femur, based upon that of Desault; but cannot now find it or the reference to it.

(N. B.—My attention has been called to an article by Dr. Mettauer, of Virginia, in the *American Journal of the Medical Sciences* for April, 1869, on a "bridged" splint for compound fractures. The plan and construction of this are, however, entirely different from the one which I have described, three slips of wood being hollowed out at points opposite the seat of injury, and applied with bandages.)

*April* 20. *Gunshot Wound of Lung.*—Dr. John H. Brinton read the following record, and introduced the patient.

J. W. B., E. Co., 57th Pennsylvania Infantry Volunteers, æt. 31, shot at Fair Oaks, May 31, 1862, by a ball from a sharp-shooter in a tree, at about 80 to 100 yards distance. The colonel (Campbell), who was shot at same time, and from same source, was hit by a conoidal ball, which was removed from his arm. It is probable that Barnes was also hit by a conoidal ball. The wound of entrance, the patient says, was like a clean cut, near the centre of the base of the scapula, the direction of the ball

was downwards and forwards, and the ball lodged apparently behind the cartilage of the 7th or 8th ribs, about two inches from the sternum on the right side.

The patient states that at the time of injury, he felt as if he had been "hit hard on the back by a stick;" he also felt as if he was hurt or torn anteriorly behind the cartilages of ribs of right side. At the *moment* of injury, there was *no* shock, but instantly bloody expectoration, not copious, only two or three mouthfuls, *dark* red, not bright red. The dyspnœa great, but he did not faint. In a *minute or two* after being hit, he suffered from nausea, and some shock, but there was no vomiting. He did not fall. He was not able to lie down, on account of dyspnœa, but was able to sit. He rode, sitting on front seat of ambulance, to Savage's Station, was there placed on a chair, taken to James River, and then on boat to Philadelphia, where he was carried from depot to St. Joseph's Hospital (fully two or two and a half miles) on a furniture car, but during all the time from the day of injury to June 16th he did not lie down or leave his chair, the same one on which he was placed at Savage's Station. Immediately after being hit (within an hour), great emphysema from the jaw down to the pelvis on right side occurred, for which he was bandaged at Savage's Station.

June 4th, 1862, admitted to St. Joseph's Hospital, Philadelphia, from which he was discharged on the 16th of June, the wound having healed. He re-entered the hospital on the 24th of July, and was then treated for inflammation of the right pleura, and was discharged from the hospital early in December, 1862. Since that time, there has been constant pain in the right chest, aggravated by exposure. He married in 1862, after leaving the hospital in Philadelphia.

Since December, 1862, he has tried railroading, but found the exposure too great. Shopkeeping was too confining; could not continue as a street-car conductor, from inability to speak at times, consequent upon spasmodic action of diaphragm. Is now (March, 1870) the proprietor of a book-stall or newspaper stand in the open air. He now weighs about 121 pounds, having fallen to this from 150 pounds, his former weight.

He has hæmoptysis about twice a year, amounting to a few small mouthfuls of blood during the day, for two or three days. He has now such an attack. Has not had one for six months previously.

*Examination of Chest by Dr. J. H. Brinton and Dr. S. W. Mitchell.*— Measurements: Right chest, at level of inferior angle of scapula to middle line, one inch below right nipple, eleven inches. Corresponding measurement left side, $10\frac{1}{4}$ inches.

There is pain on pressure, on right side of spine, from 3d to 6th vertebra, between vertebral spines, and posterior scapular margin. The wound, which is perfectly cicatrized, is on a level with the 5th vertebra, and about $\frac{7}{8}$ of an inch from the posterior margin of the scapula. Great tenderness over all the muscles, between the posterior margin of scapula and vertebræ, and up to a point $2\frac{1}{2}$ inches above cicatrix, and $\frac{1}{2}$ below the middle of spine of scapula. Hyperæsthesia of surface in an area extending from 1 inch below to 2 inches above scar.

A very tender spot was detected, 5 inches below the posterior angle of the axilla, between the 7th and 8th ribs. Tenderness was also evident 2 inches in front of that point, and extending from the 5th to the 8th ribs.

On the front of the chest, tenderness on pressure commenced one inch above the right nipple, extending to the middle sternal line, and downwards as far as the margins of the costal cartilages. The extreme of tenderness was marked by a line drawn obliquely downwards from the right nipple to about the anterior margin of the 8th costal cartilage. General hyperæsthesia of surface existed over this tender region.

The patient experiences pain when he bends his body forwards; and when he wishes to seize an object on the floor, he crouches, bending both knees alike. He himself believes that the ball lies at the front and lower part of the right chest, and that it shifts when he attempts to laugh or sneeze, or bend forwards.

That some unknown lesion probably exists at the point indicated, we may readily conceive, and we are inclined to think that a sac of false membrane exists immediately behind the costal cartilage, and in the vicinity of the diaphragm; and that most probably this sac contains the ball; we think moreover that the sac is of some size, and that the ball is loose.

*Auscultation.*—*Anteriorly* the inspiratory and expiratory sounds were heard throughout both lungs, but they were very short and somewhat rough, owing perhaps to their speed. There was no loss of respiratory space at the site of the pain below the right nipple, nor was there any unusual dulness thereabouts.

Transmitted heart sounds were heard about 2 inches below the right nipple, marking, and to a certain extent confusing the respiratory sounds.

*Percussion* over the right lung anteriorly, even when practised with the utmost gentleness, produced great pain and dyspnœa; especially was this the case when percussion was made over the swelling at the costal margins, the supposed locality of the ball.

The upper part of the right lung was clear on percussion, shading down to the ordinary level of liver dulness, and becoming more dull over the costal swelling.

Posteriorly, respiratory sounds were heard over both right and left lungs, more distinctly, perhaps, over the left lung.

*Dyspnœa.*—This has been present in the case from the time of injury. It is greatly increased by certain positions. Thus he cannot sleep or lie upon his side; if he does so he very shortly awakes with violent paroxysms of dyspnœa. He is obliged, therefore, to sleep on the flat of his back, with his head low. He rarely sleeps well, and is awakened by the slightest touch, after which he sleeps more uneasily. Rests better if the preceding day has been a quiet one, free from excitement. If he laughs especially heartily, violent dyspnœa amounting almost to suffocation is induced, followed by great prostration.

*Respiration.*—The marked feature in Barnes's case is the rapid respiration. Usually when at rest it is a little slower than the heart beat, sometimes it is almost synchronous with the latter. On exertion the respiration rises rapidly, passing the heart pulse. Thus:—

1870, *Feb.* 27.—*Patient sitting quietly in his own room.* Pulse 74; respiration 66.

*March* 3.—*One hour after supper*, having walked about a mile, and examined in *standing* posture. Pulse 90; respiration 76 to 78. At same time examined in *recumbent* posture. Pulse 78 to 80; respiration

64. On same evening the patient was directed to run twice up and down one short flight of stairs. Then pulse 100; respiration 108 or 110.

13*th.*—The respiration and cardiac movements were synchronous, viz., 78. A little exercise sent the pulse to 95 and the respiration to 125.

14*th.*—After a short walk, pulse 100; respiration 120. From the date of the wound until March, 1863, his breathing was almost thirty times to the minute. At that time over-exertion caused the present rapid rate.

Prior to his being wounded this patient was an accomplished diver, and could hold his breath for over a minute; now he can hold it only for a few seconds. When he does so the heart-pulse becomes somewhat slower, a proof of the integrity of the pneumogastric nerve.

*Heart.*—The heart does not seem to be injured seriously by the long-continued speed of the respiratory movements, at least its valves have not suffered, although the first sound is often faint, as if there were a feeble left ventricle. This would seem likely to be the case from the appended sphygmograms, taken by Dr. Mitchell, and which indicate a feeble heart and a relaxed arterial tension.

Tracing of sphygmogram of Barnes's pulse when he is quiet.

Fig. 1.

Tracing of sphygmogram of Barnes's pulse when exhausted.

Fig. 2.

A marked feature in B.'s case is the peculiar facial spasm which occurs some fifty or sixty times a day. During each one of these spasms the lower jaw is pulled down once or twice, and respiration and speech are arrested. Each spasm commences with pain over the hyperæsthetic space in front.

*Right arm.*—The loss of power in the upper extremity of the right side is very evident. The patient states that immediately after being shot he dropped his gun, that he was not able to grasp it, and that for six months he could not elevate his right arm. He states "that the shoulder was paralyzed."

At present he cannot raise the arm above the level of the shoulder, and the grasp of the right hand is very feeble, contrasting strongly with that of the left hand, which is remarkably vigorous for one of his build.

The want of power in the right hand points to the probability of its having been due to a reflex paralysis originating in shock at the time he was wounded. Indeed there seems to have been sudden loss of power at the moment, and no amount of disuse possible to a man who has to do even light work will account for the vast disproportion between the strength of the two forearms.

I ought to add that we found it impossible to make as perfect a report of this case as the interest demands, because of the terrible exhaustion and nervousness which are brought on by percussion or even by pressure of an ear upon the sensitive regions of the right chest.

Dr. John H. Brinton counted the pulse and respiration in the presence

of the Fellows, and found them respectively 96 and 112 in the minute. He had never before met with such increase in respiration without corresponding increase in the pulse.

Dr. John Ashhurst, Jr., thought he observed that when the patient spoke the rapid diaphragmatic action subsided. He seemed able to hold his breath for some time when the motor force was directed to the muscles of phonation.

Dr. Brinton stated that the patient always held his breath for 10 or 12 seconds during the facial spasms.

Dr. S. Weir Mitchell said that the first point of interest in this case was the great weakness of the right arm. Barnes had at first attempted to carry his musket off the field, but was obliged to drop it repeatedly, and finally to leave it. After that period there was a good deal of disuse of the arm. No remarkable difference can be observed in the muscular development of the two arms, not enough to account for the difference in power. The grasp of the left hand is vigorous, while that of the right is singularly feeble. Mere disuse would not explain the vast disproportion. He was therefore inclined to believe, although he had reached the conclusion somewhat doubtfully, that the impairment of power was a reflex effect. As to the cause of the rapid breathing, he was somewhat undecided. There was no considerable loss of lung tissue to render a great degree of supplementary action necessary. The explanation, then, must be, that some unusual impression from without was conveyed to the nerve-centres, so giving rise to the frequent respiration, or else that the nerve-centres themselves were so affected as to be over-susceptible, and respond inordinately to the ordinary influences. It might be that the retained ball was acting upon healthy nerve-centres, or, more probably, that the morbidly excitable nerve-centres made excessive response to the normal respiratory excitants. Nor would this seem very extraordinary if the Fellows would recall the usual phenomena of shock after accidents, where sometimes the heart is enfeebled, and sometimes the whole muscular system, as where single limbs become absolutely palsied. It was therefore not impossible that the shock of a grave wound of the respiratory organs might occasion conditions of the related nerve-centres competent to occasion such a rate of breathing as we see in the present case.

Dr. J. Cheston Morris asked if the electro-muscular excitability had been tested.

Dr. S. Weir Mitchell replied that it had not been possible to do so. Even auscultation and percussion of the heart and lungs produced excessive agitation and fatigue. On one occasion the patient lay for more than half an hour in a state of alarming prostration, consequent upon a very gentle examination. He hoped, however, to investigate this portion of the case more fully at another time.

Dr. Wm. Pepper asked if it were possible to form any other conclusion as to the course of the ball. It entered so far from the vertebral column that, had it passed downward, forward, and to the right, it would have missed the branches of the sympathetic nerve, and any large branch of the pneumogastric. Could it have passed inward and downward ?

Dr. John H. Brinton replied that he had no means of determining the question except by drawing an imaginary line from the point of entrance to the area of extreme tenderness. Barnes had felt the stroke behind, and then a sensation of tearing at the spot in front. As he was shot by a

sharpshooter from a tree, the ball had certainly ranged downward, possibly a little inward. Extreme dyspnœa being produced by mere inspection, it had been impossible to make any accurate physical examination.

Dr. William Pepper called attention to the very peculiar muscular spasms which the patient presented, and which, it seemed to him, were strongly in favour of Dr. Mitchell's view that the dyspnœa was due to reflex irritation of the pneumogastric nerves. Thus these spasms affected the muscles of the face and of the larynx. The patient further states that he occasionally is seized, while eating, with spasm of the pharyngeal muscles, or of the upper part of the œsophagus, preventing deglutition and causing regurgitation of the food. He also suffers from spasmodic aphonia, so that at times he is obliged to wait a full minute before being able to begin a sentence. It would thus seem that branches not only of the pneumogastric (as the recurrent laryngeal), but also of the facial, the hypoglossal, and the spinal accessory nerves were affected in the production of these muscular spasms. When it is borne in mind that Mr. Lockhart Clarke has demonstrated a close anatomical relation between the nuclei of origin of these nerves in the medulla oblongata, it may readily be understood that a peripheral irritation of branches of the pneumogastric nerves (as of their pulmonary branches) might excite a reflex irritation of the other nerves mentioned, and thus explain the occurrence of such spasms as were presented by the patient.

Dr. H. C. Wood referred to the facial spasm being preceded by pain in the tender portion of the chest, and suggested a resemblance of this phenomenon to the epileptic aura.

Dr. Caspar Morris said he had frequently observed, in long-continued cases of paralysis, that the act of gaping was accompanied by elevation of the arm. He thought the phenomenon might group itself with some of the symptoms in Barnes's case.

Dr. Edward Hartshorne remarked that the case in its general characters, reminded him of chorea, not only as it occurs in children, but also as seen after gunshot wounds.

*Ulceration of the Skin as an Effect of the Use of the Bromides.*—Dr. S. Weir Mitchell read the following paper: Every physician is aware that these salts may cause an eruption of small boils or pimples, which appear in successive crops—sometimes between the shoulders only, and sometimes there and on the face—more rarely they are generally disseminated.

In the cases of women this constitutes now and then a grave objection to the use of bromides, except in very serious disease, where the complexion is no longer an object of moment. In epilepsy I have now and then had to lessen my doses or lay the drug aside for a few days, on account of this evil; but save in the two instances about to be reported, the skin disease caused by bromides has never interfered practically with their continuous use.

A lad at the age of 10 began by having the lesser epilepsy, caused apparently by gastric disorder. These attacks gradually increased in number, and after two years he began to have convulsions, which now for several years retain the same character. At intervals of from nine to fifteen days he has, within forty-eight hours, two or three attacks. They resemble in all respects the typical fit, save that he does not bite his tongue. The lesser seizures are numerous, and the memory has been seriously

impaired. Several years ago, I began to give this lad bromide of potassium, with an excellent effect in lessening the number and force of his fits, although it never fully held them in check.

After some nine months of its use, in twenty to thirty gr. doses, thrice a day, the boils, which had begun very early to plague him, became larger and more abundant, not only on the face but also on the scalp and extremities. His parents shared my desire to get out of the bromide its full value, and it was therefore agreed to push it. This resulted in certain of the boils enlarging and leaving a deep ulcer with everted edges and with a strong tendency to accumulate pus and epithelia in the shape of a conical cover causing it to resemble closely rupia. At one time he had nine such ulcers, none less than an inch in diameter and one or two of double this size, while the boils were numbless and painful. At this time I succeeded in persuading the patient and his near relatives that the medicine was the sole cause of this annoyance, and it was therefore lessened; but not until he got down to thirty grains a day did the ulcers begin to heal. Some months later, he being in the country, away from me, they were tempted to give the bromides once more in full doses. Precisely the same result occurred; but when he was brought in this pitiable state to me, I endeavoured to discover how the bromides could still be given without causing boils, for on this latter occasion the ulcers formed within two months and under very moderate doses. It was clear enough that the boils were only the small beginnings of a mischief which ended in the ulcers, so that to save from one would enable us to escape the other, and in this point of view the appearance and enlarging of the boils became a sufficient and early test.

I should add that bromides were always of great use in this case until under the influence of multiplying ulcers, the general health began to fail, and the fits to increase.

I began by making the functions of the skin more active with warm baths, flesh brushes, and other means, with always great attention to the bowels, and finally with various diuretics, both vegetable and mineral. Then I tried tonics, such as bark and iron. The other means had merely failed, but the iron, especially its most efficient form, the tincture of the chloride, enormously increased the attacks, as it is very prone to do. Next I employed manganese, zinc, silver, bismuth, all alike in vain; nor was any local plan of treatment more fortunate. Finally I rang all the changes upon the combinations of bromine, using them before or with or after meals. The bromides of potassium, sodium, and ammonium all alike occasioned these hideous boils and ulcers. All of the three salts acted favourably upon the fits, the ammonia salt requiring much larger doses, and being apparently not quite so sure in its effects. I then began to employ, with but faint hope of success, combinations which are not in common use, such as bromide of calcium, of magnesium, and even bromine itself in solution. None of the latter agents surely lessened the number or force of the fits, so that there was no reason to continue them long enough to tell whether or not they would increase or keep open the ulcers. So far as I can now recall, the bromide of lithium was the last used of the bromides. It caused new or increased the old ulcers, and had the usual happy influence upon the fits of the other bromides of fixed alkalies.

Until lately, I supposed that the above case, of which I have related enough to serve my purpose, stood alone as to the possible extent of the

influence exerted by bromides upon the skin. Two months ago, however, I saw a young man from Northwestern Pennsylvania, who, on account of an epilepsy of ten years' duration, took, without advice of any physician, a quack preparation which I have found to contain about 25 grains of bromide of potassium to each dose. Finding that he obtained but slight relief and despite increasing boils, of the origin of which he knew nothing, he doubled the dose and took for at least a month, 50 grains thrice a day. When I saw him, he had above the right knee an ulcer two inches wide, and through neglect, covered with a conical cap of dried pus, so as to look like rupia. On the same leg were two ulcers, and on the left arm and back of neck were three. It may seem incredible that the only physician in his neighbourhood, to whom he showed these ulcers, and related his case and treatment, should have considered his case as one of syphilis. Upon withdrawing the bromide, these ulcers healed with the most astonishing rapidity.

Excepting these two cases, I have seen no instance of bromic ulcers, although, like others, I have met with many cases of such eruptions of small boils, as to make it advisable to lessen or stop the offending drug. On the other hand, in some epileptics the largest doses of bromides cause only slight acneous eruption between the shoulders, while in a very few no therapeutic device will lessen or prevent the most enormous outbreak of boils. So far, no device has aided me to solve this problem. In France one observer at least has contended that the sodium bromide is less productive of boils than the others. I am positive, however, that this is not the case, and that we have no means as yet of giving bromides with a certainty of not causing eruptions.

Dr JOHN ASHHURST, JR., said that the most obstinate ulceration which he had ever observed after any hypodermic injection, followed the subcutaneous use of fifteen grains of bromide of potassium. The syringe was entirely clean, and there was, therefore, every reason to attribute the ulceration to the irritation caused by the substance employed. The remedy had been given in this way twice, because of tetanic spasm which prevented deglutition. The ulcer persisted until death occurred, three weeks subsequently. (See *Proceedings Pathological Society*, in *American Journal of Medical Sciences*, July, 1866, pp. 130–133.)

Dr. S. W. MITCHELL had not used more than five or ten grains of bromide of potassium hypodermically. He had given bromide of lithium in the same way, and had seen some threatenings of inflammation, but only once a small abscess.

Dr. WILLIAM PEPPER suggested that individual differences in the irritability of the skin might determine the production or non-production of the cutaneous boils and ulcers. In the Epileptic Ward of the Insane Department of the Philadelphia Hospital, containing nearly two hundred patients, bromide of potassium was used to a very large extent, and the amounts taken at times during the most severe paroxysms were very great; yet the eruptions produced were usually too trifling to attract notice. Spontaneous complaints from the patients were very rare, and examination discovered acne and boils in but a moderate proportion of cases.

Dr. JAMES DARRACH had had under care a child which suffered from attacks of *petit mal* during teething. Two or three attacks occurred each week. They were fainting fits, not convulsions, and were excited partially by resistance to its will, as by putting it into the bath, or by

taking things from him; but also occurred spontaneously. He gave bromide of potassium in doses of five to ten grains three to four times a day, and continued the remedy for eighteen months or two years. No eruption was produced; but fearing an injurious influence upon the general nutrition, he was careful to suspend the medicine occasionally for short periods, in order that the secerning organs might clear the system. The child had been entirely well for a year after the completion of teething, but since the commencement of the warm weather, had suffered two or three times with paroxysms of irritable temper. Sea-shore life had an excellent effect upon the little patient. He inquired whether the emunctories were active in the cases of ulceration reported by Dr. Mitchell. Also whether epileptics could take large doses of the bromides with impunity.

Dr. Mitchell, replying to Dr. Darrach's question, "Were the emunctories in good condition?" said he knew nothing to the contrary. He thought that in private practice careful examination would seldom fail to find an eruption of acne between the shoulders, after the administration of the bromides had been continued for two or three months.

Dr. J. Cheston Morris thought that the facts stated by Dr. Pepper might be harmonized with the existence of the eruption, as observed by Dr. Mitchell; moderate doses were thrown off by the kidneys and skin, irritating the latter structure, while the large amounts probably passed away through the bowels. He had seen an eruption from the bromides most frequently in those who bathed often, and whose skin was thus overstimulated and particularly liable to inflammation. He thought the true mode of relief was to increase the urinary secretion and relieve the skin.

Dr. Wm. Pepper observed that this explanation would apply only to the exceptional cases in the Philadelphia Hospital, where unusual amounts of the drug had been administered for short periods, and could not account for the absence of the eruption in the larger number who took it in ordinary doses for long periods.

*On the Use of Bromide of Lithium.*—By S. Weir Mitchell, M. D.

In the experiments upon various bromides to ascertain whether or not any of them were free from the evil of causing destructive skin ulcers, I was struck with the fact that the bromide of lithium seemed to cause a more rapid and intense sleeplessness than the other bromides.

This observation induced me to use it since then in certain obstinate cases, and to test it comparatively with the bromides of sodium, potassium, and ammonium. These results I propose to call to the attention of the College. Up to the time I mention, bromide of lithium was not used in medicine, so far as I am aware, but was extensively employed in certain photographic processes, for which it was manufactured perfectly pure.

This salt is very deliquescent, and were on this account better given in solution. As I shall have to point out it has seemed to me to act more rapidly than the other bromides, and this may be due to its easy solubility, which is ordinarily associated with a high osmotic equivalent. There has been some tendency of late to prefer the bromide of sodium to that of potassium as a therapeutic agent, because of its possessing a larger amount of bromine. If any reliance is to be placed on this test we should acquire a new reason for placing bromide of lithium above both of them. The percentage is nearly as follows:—

In bromide of potassium there is about 66 per cent. of bromine; in

bromide of sodium 78 per cent., and in bromide of lithium nearly 92 per cent.

I think the taste of the new salt rather less unpleasant than that of bromide of potassium, and rather more disagreeable than that of the sodium or ammonium salt.

The price of the lithium salt is at least four times that of the other bromides, but I am told that upon its larger use this difficulty will disappear.

My reasons, in brief, for bringing this new agent to the notice of the Fellows, are these:—

That it has seemed to me to act efficiently in some cases of epilepsy where bromide of potassium has failed.

That it is thus efficient in lesser doses than the salt just named.

That as an hypnotic, it is superior to the potassium salt and to the other bromides. To support these propositions, I select the following cases from my note-book.

J. T., æt. 14, had, at twelve years of age, attacks of *petit mal*, which in two years became interspersed with convulsions, sometimes at night, sometimes in the day, but usually violent. The case originated in gastric disorder, which has been very unmanageable. A year ago, he began to take bromide of potassium in doses rising from ten to thirty grains thrice a day with various treatment, addressed to the stomachal conditions. At first the bromide controlled the fits, but gradually they returned despite its increase to two drachms daily, while at the same time he suffered from insomnia. In this condition he returned to this city, where I again tried the bromide which had been abandoned in despair, he having a fit every three or four days and numerous little attacks. Here, as at his own home, bromide lessened the number of attacks one-half, but no more, and the insomnia remained scarcely altered.

After trying valerianate of quinia and belladonna, I resorted to bromide of lithium, of which he took, at first ten and finally twenty grains *ter in die* with the effect of improving his condition, at once giving him sound sleep, and lessening both forms of fit, so that he had light convulsions only once in two weeks, and the *petit mal* not more than once in two days. Owing to the cost of the lithia salt, I returned, after two months, to the bromide of potassium, with at that time a result quite as good as that given by the bromide of lithium.

About eleven weeks ago, I determined to treat the gastric disorder by milk cure. Under this combination, his attacks have ceased, there having been none in eleven weeks: the stomach being comfortable, the *petit mal* altogether absent, and the memory, previously much impaired, having become rapidly better; so that the lad writes: "Life seems to me now quite a different thing from what it used to be." Of course I do not look upon him as cured, but I am glad to quote his case as one of the instances, which I hope to lay fully before the Fellows, of success attained in epilepsy by this combination of milk cure and bromides, where the latter alone had failed.

Eliz. C., æt. 19. Has had daily an epileptic fit on rising in the morning, or more rarely after breakfast. Anxious to compare the two salts, I gave her first bromide of potassium in doses of 25 grains thrice a day. This amount controlled the fits, which never returned unless she lessened the dose to fifteen grains, when she would have an occasional fit; in some weeks one, in others two. Ten grains of bromide of lithium thrice a day absolutely controlled the attacks, so that in two months there

were none. I could not trace in this case any sufficient cause of disease.

It is hardly necessary to take up the time of the College with the familiar details of epileptic cases. I have at present under my care a case of *petit mal* without convulsions, recurring twenty or more times a day. The patient is positive that eight grains of bromide of lithium exercises a better influence than triple that amount of the potassium bromide.

A brother of this patient has had for years fits of epilepsy, which occur about once in ten days; he has a gastric aura, in the shape of slight nausea, which in most instances precedes the fit by nearly an hour. I used to order for this a mustard emetic, which sometimes broke the attack. He himself discovered, however, that twenty grains of bromide of lithium taken at once, in addition to his regular use of this salt, or of bromide of potassium, would at least two out of three times cut short the trouble. Now this result must have been due to some more sure or more speedy action of this salt, because the other bromides in like doses failed to so affect him. He is now doing remarkably well under the added use of milk cure.

I have now under my care Mrs. P., the wife of a physician. She has had for a year ringing in the left ear—some feebleness in the right leg; rarely a tendency to aphasia, and more or less insomnia; with noises and pain referred to the left temporal region. Bromide of potassium has proved of much service, but as it began lately to lose its power, I substituted, without her knowledge, ten grain doses of the lithia salt for twenty grain doses of the bromide of potassium. She remarked next day that the old medicine was doing her good again, and in fact the improvement in sleeping and in other respects was most distinct.

Miss V., an intelligent woman, after using the bromide of potassium for continued headache and insomnia, was placed on fifteen grain doses of the lithium salt. She is of opinion that the relief which follows always with her each dose of either salt, is much more rapid when bromide of lithium has been used, and that she sleeps sounder under its use.

Ch. P., teacher, married, æt. 44; a victim of over-work, and various forms of trouble. Is incapable of any prolonged mental exertion, which flushes his face, causes intense pain between the shoulders, and insomnia. Has also frequent nocturnal emissions. Finding that the bromide of potassium, in twenty grain doses, thrice daily, was of great service, I requested him to use in place of it the lithium salt, and to observe the comparative results. He thinks the latter more unpleasant to take, but is of opinion that its power to bring sleep is greater, and indeed complains that it makes him feel too drowsy during the day.

It is needless to add to this evidence—and whether I am right or wrong in concluding that in bromide of lithium we have an addition of value to our list of bromides only larger future evidence can decide; I have long hesitated to lay the case before my medical brethren, and now trust that what I have here said may at least be thought sufficient to justify me in publishing my belief.

*May* 18. *Dislocations in Children.*—Dr. JOHN ASHHURST, Jr., reported three cases of dislocation, which he thought were somewhat interesting as occurring in children, and as illustrating the comparative influence of the muscular and ligamentous structures in resisting efforts at reduction.

Case I. A boy, aged 10 years, admitted to the Episcopal Hospital Feb. 6, 1866, with luxation of the head of the right femur downward and forward—the injury having been produced several days before by violence exerted while the thighs were widely abducted. The dislocation was reduced by manipulation, without anæsthesia, and the boy discharged, cured, nine days later.

In March, 1870, Dr. A. had examined the limb again—the boy exhibited no evidence of his former injury, but felt slight pain in the knee when fatigued by unusual exertion.

Case II. A boy, aged 8 years, admitted to the Episcopal Hospital February 19th, 1870, with luxation of the head of the left femur upward and backward, produced one hour before by a blow upon the hip from a falling piece of timber. The dislocation was readily reduced by manipulation without ether, and the patient discharged, cured, in ten days.

Case III. On March 27, 1870, a female child, 2½ years old, while being swung around by the arm, in play, by an older person, received a sub-coracoid luxation of the head of the left humerus. The dislocation, as in the other cases, was readily reduced without ether.

Dr. Ashhurst referred to the old dispute as to whether resistance to reduction, in cases of luxation, came from muscles or ligaments, and used the cases above recorded as illustrations of the necessity of recognizing both elements: the muscular resistance in children was slight, and in adults could be annulled by employing anæsthetics, and there then remained only the ligamentous resistance which had to be considered in studying the mechanism of any mode of reduction.

Dr. Packard had met with a subclavicular dislocation of the head of the humerus twice in the same child. The first injury occurred at the age of two years, the second a little more than three months later; and both were due to lifting the patient by the arm. No anæsthetic was used in the reduction, which was easy. He thought the luxation was facilitated by the imperfect development of the bony processes, especially the coracoid.

# SUMMARY OF THE TRANSACTIONS

OF THE

# COLLEGE OF PHYSICIANS OF PHILADELPHIA.

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1870. *May* 18. *Trephining in Cerebral Disease, with a Successful Case.*—Dr. WILLIAM PEPPER remarked that it is familiarly known that the operation of trephining has been frequently performed for the relief of epilepsy. In some of these cases the practice has been purely empirical, and has been followed by no improvement in the condition of the patient. In other instances there have been more or less clear indications for the operation, and its performance has at times been followed by most brilliant success.

Among the latter may be mentioned those cases in which epileptiform convulsions have followed a depressed fracture of the skull. So, too, there are cases where a fixed and circumscribed pain, or, still more, some lesion of the external table of the skull, as an osteophyte or a spot of necrosis, has indicated the probable seat of the intracranial disease. In such instances it has occasionally happened (as in the one operated on by Mr. Cline, the specimen from which is preserved in the museum of St. Thomas's Hospital, London) that an osteophyte has been found springing from the under surface of the circle of bone removed by the trephine. In constitutional syphilis, also, it not rarely happens that grave cerebral symptoms make their appearance. In some such cases there is no external sign whatever to aid in locating the seat of disease, whether it be a periostitis, an ostitis, or a gummy tumour springing from the membranes. Even here, however, a careful analysis of the symptoms and the mode of their development will go far to determine both the nature and seat of lesion. In other cases this diagnosis is rendered more easy by the detection of some localized disease of the pericranium or cranial bones, which may be concluded to correspond with the seat of intracranial disease.

In the following case of cerebral syphilis, where the symptoms were of the most alarming character, the conjunction of rational and physical signs pointed so clearly to a localized lesion as to lead to the performance of trephining with the happiest result.

*Case of Constitutional Syphilis; Febrile Symptoms like Tertian Ague, Intense Headache; Left Hemiplegia; Strabismus and Ptosis; Increasing Coma and Stertor; Node on right side of Frontal Bone; Failure of Specific Treatment; Trephining; Recovery.*—A. H. W., æt. 21, single, of temperate habits, entered the U. S army in 1860. He had previously enjoyed good health, with the exception of an attack of gonorrhœa. In 1861 he had a chancre, followed by a suppurating bubo. He

received wounds in left arm and foot, causing partial anchylosis of elbow and ankle. In 1865 he had rheumatic inflammation of knees and shoulders, and this persisted with varying severity for two years. In 1866, ulceration of hard palate; had also copper-coloured blotches on skin, nodes, and osteocopic pains. Was admitted to venereal ward of Philadelphia Hospital Feb. 19, 1868, with chancre and non-suppurating bubo. Had return of osteocopic pains, and later, about May 1, 1868, was attacked with periodic febrile symptoms resembling tertian ague, with intense frontal headache. Was transferred to medical ward under my care, May 5. Under full doses of sulphate of cinchonia the chills ceased, but intense frontal headache continued. The pain was in temples and forehead, occasionally in back of head, and was equally severe on both sides. There was also noticed a small node on frontal bone, to the right of the median line, $1\frac{1}{2}''$ above superciliary ridge. Under the idea of malarial origin of headache, the cinchonia was continued, and he was ordered arsenic and belladonna, with blisters to temples, which afforded only temporary relief. On May 23 there was slight paralysis of the left arm noticed, and a little drawing of the face to the right. There was no paralysis of the muscles of the eyes. Right pupil slightly larger than left—both movable. Other special senses not affected. Mind dull, and answers questions slowly but correctly, and no convulsive movements. He was immediately ordered iodide of potassium gr. v, and bichloride of mercury gr. $\frac{1}{16}$, thrice daily. The paralysis increased rapidly, becoming complete, with implication of the sphincters, by June 2. Electro-muscular contractility and sensibility seemed impaired on both sides, though more so on left side. Speech much affected, without any true aphasia. On June 6 paralysis remained the same; spasmodic twitching of palsied leg; high fever; pulse 108 to 112, with occasional profuse sweats; mind was dull. The doses of potassium and mercury were increased.

On June 11 heat of skin and acceleration of pulse continued. Slight internal strabismus of right eye noticed, with slight ptosis. On June 12 there was so marked a tendency to stupor that it was impossible to arouse him completely. Respirations were twenty in minute, stertorous—both cheeks puffing. Evident impairment of power on right side. Pulse 120, and feeble. Speech very imperfect, but dulness of mind too great to enable it to be said any aphasia was present.

On June 14, his condition remaining the same, a consultation was held with Drs. Maury and Rhoads, and it was determined to remove by the trephine a disk of bone from the portion of the os frontis corresponding to the node. The operation was very successfully performed by Dr. Maury. It was followed in about five hours by a slight convulsion.

The disk of bone removed presented a high degree of hyperostosis with sclerosis. The under surface was marked by irregular ridges and enlarged vascular pores, indicating a process of chronic inflammation of the dura mater. It was evident, however, that the diseased condition of the bone was by no means limited to this part.

In course of next forty-eight hours his condition decidedly improved. The respirations fell to 14, and became less stertorous. The pulse fell to 106, and became more regular and of better volume than for two weeks previously. Strabismus disappeared, articulation improved, and he expressed himself as feeling brighter and better. Treatment was continued (potass. iod. gr. x; hydrarg. bichlor. gr. $\frac{1}{8}$ t.d.).

From this time his improvement steadily continued, his mind grew

more clear, and, by June 25, all traces of dulness had disappeared The febrile symptoms also subsided. Strabismus and ptosis disappeared, and speech rapidly improved. The power of motion returned more slowly in arm and leg, but in ten days' time from operation he was able to lift his leg clear of the bed. The dura mater bulged quite markedly into the opening made by the trephine. A small amount of healthy discharge occurred each day from the bone and soft parts.

In the course of two months he became able to walk with the aid of a crutch. He gained flesh and strength; his functions were all well performed; has had no return of headache or paralysis; wound still discharging; the cicatrization is advancing. Iodide of potassium (gr. x four times daily) has been continued; the mercury being suspended. In December the cicatrix on forehead opened, and it was found that some necrosis of the rim of bone surrounding the opening had occurred.

By March, 1869, all traces of paralysis of the face had disappeared, and he was able to walk quite well with the aid of a cane, though still obliged to swing left leg somewhat. The power of motion in left arm had not been so much recovered. There was marked impairment of motion of forearm muscles, with tendency to contraction of the flexors. The real improvement in power was much masked by the difficulty of motion in left arm and leg resulting from gunshot wounds. Still continued to take iodide of potassium, with occasional intermission of a few weeks, during which he always felt worse, and begged for a resumption of the remedy.

On June 24, 1869, an almost complete ring of necrosed bone was removed from around the point of trephining, and on August 25 another small piece came away, after which the wound assumed a healthy appearance, and healed by granulation.

He gained flesh rapidly, and when he left the hospital, early in 1870, presented the appearance of vigorous health. He had regained good power over muscles of shoulder and arm, but those of forearm were still rigid and contracted, holding hand placed at right angle on forearm. He had quite good use of leg, and walked without swinging, merely advancing it in a hesitating way. There were no evidences of any return of cerebral symptoms. The use of iodide of potassium was, however, maintained, with occasional intermissions.

At the time when these cases, upon which this brief paper is based, occurred, I was not aware of any recorded cases in which trephining had been performed for the relief of cerebral symptoms due to syphilitic disease of the brain or of the bones of the skull. Since then, however, I have met with several such cases, to which I will allude in the order of their occurrence:—

In the 1st volume of the *Dublin Hospital Reports*, p. 342, a case is reported, by Sir Philip Crampton, of a woman, æt. 32, who was admitted into Meath Hospital on December 14, 1812, with a tumour about the size of a half walnut over the middle of the left parietal bone; soft and elastic at the centre, and with a small fistulous opening leading down to the bone, which was bare and necrosed. This was attributed to a blow. The right arm was palsied and atrophied; the speech indistinct; and there was marked emaciation and pallor. There were also frequently recurring epileptiform fits. An incision was made through the tumour and the skull trephined beneath it. The dura mater bled freely, and was highly vascular. The patient steadily improved, and in six weeks was

able to return to her occupation, having entirely recovered use of her right arm.

It is not improbable that the nature of the disease in this case was syphilitic.

In the *Medical Times and Gazette*, August 18, 1860, Mr. Jno. T. Bryant reports the case of a patient admitted to Guy's Hospital, February 14, 1860. He denied ever having had a blow or having contracted syphilis. For months previously a painful swelling had appeared over the left parietal bone; this suppurated and was opened. In February epileptiform convulsions (without loss of consciousness, and affecting chiefly left side of face and right side of body and right hemiplegia) appeared. Death appearing imminent, trephining was performed on February 17, over seat of disease on left parietal bone. On inner surface of circle of bone removed was a nipple-shaped osteophyte. The dura mater was inflamed and granulating. The fits ceased after the operation; the man, on regaining consciousness, expressed himself as well. All pain in the head had ceased, and the paralysis gradually disappeared. The opening made in skull gradually filled in; the bone, however, was still inflamed and roughened, and necrosed.

On February 24 slight fits occurred; and on April 24 they became reestablished, and recurred at short intervals till June 24, when he died hemiplegic, with pyæmic symptoms. There was extensive disease of parietal bone. The dura mater was adherent and softened, and pus was found both below and above it. Syphilitic deposits were also found in the testes, liver, and spleen.

In the report of the *Transactions of the Royal Medical and Chirurgical Society*, on June 26, 1860, published in *Medical Times and Gazette*, August 25, of same year, there is an abstract of a paper read by Mr. Henry Lee, upon this subject. This paper was not published in extenso in the Transactions of the Society, so that the abstract is my sole authority. In this paper Mr. Lee recounts the history of three cases of syphilitic disease of the bones of the skull, accompanied with marked cerebral symptoms, in which trephining was performed with marked relief in two of the cases. In the first case there was syphilitic necrosis of the left side of frontal bone, and of part of left parietal bone. The patient presented marked general debility, loss of sensation on right side of the face, and deafness in both ears.

The operation of trephining was followed by general restoration of health, recovery of sensation of the face (with exception of a small portion of the right side of the upper lip, which still remained numb), and perfect hearing. The inner surface of the portion of bone removed presented a very uneven surface, from whence numerous small, irregular spicula of bone projected.

In the second case there was extensive disease of the outer and middle tables of the skull. In consequence the patient became affected with severe convulsions, without loss of consciousness. The application of the trephine in this case was made over the right temporal bone. The portion of the internal table removed was slightly roughened, but not nearly so much as in the preceding cases. The fits recurred a few days after the application of the trephine, but ultimately ceased, and the patient was restored to comparative health.

In the third case there was extensive destruction of bones of skull, and in one place the inner table had perished while the outer and middle

tables still maintained their vitality. At this point effusion of plastic matter had taken place, and the disease had spread by continuity of action to the brain, and produced red softening. There was no disease, either in the brain or its membranes, in those situations where the entire thickness of the skull had been removed. The patient was comatose at time of operation. The trephine was applied to the right parietal bone, but did not hit the exact spot where internal table was destroyed. The softening of brain having already occurred, the coma persisted, and patient died.

Still another case has been more recently published in Germany. The following is condensed from a more full account of the case :—

*Syphilitic Necrosis of an extensive part of the Frontal Bone, Right Hemiplegia, and Consecutive Aphasia; Threatened Fatal Termination; Trephining with Favourable Results.*—By J. A. Vèdrenes (*Rec. et Mém de Méd, etc., Milit.*, 3 sér. xx. p. 42, January, 1868), in *Schmidt's Jahrb.* Bd. 144, 1869, p. 162.

The patient was a soldier, aged 29, of strong constitution. He contracted a hard chancre, which was followed by bubo, and in six weeks by roseola, alopecia, and enlargement of glands of neck. Soon after, numerous tubercles appeared on forehead and extremities. By end of second month, an abscess had formed over upper part of forehead, communicating with necrosed bone. Throughout third month, the patient suffered with intermittent febrile attacks, and lost flesh and strength. He was treated with quinia, iodide of mercury, and iodide of potassium. Some improvement of general health followed, the necrosis of frontal bone slowly progressed. By tenth month, his general health was much improved, and a small sequestrum from outer table of frontal bone was removed. By end of the year, the fistulous tracks on forehead were cured; but soon after swelling of gland and tubercles reappeared, with intense headache, loss of sleep and appetite. Neither iodide of mercury nor iodide of potassium had any influence upon the symptoms, and in a few days aphasia and impairment of sensibility on right side of body appeared. Three days later, delirium and general muscular spasms occurred. The patient's condition grew worse; the eyes were turned inwards, the limbs were relaxed, or at times tremulous; the breathing was frequent and jerking, the pulse 135 to 140 in a minute. As a last resort a crucial incision was made over necrosed portion of bone, and the crown of a trephine $1\frac{1}{2}$ centimetre in diameter applied. The cutter was applied in middle line of left half of frontal bone, 9 centimetres above the corresponding eyebrow. Immediately after removal of the piece of bone, he opened his eyes, looked about with an astonished expression, yawned, moved his head in answer to questions, and said "yes." By examination with the finger, the inner table of skull was found intact.

A few drops of thick, bloody fluid escaped from the wound. The pulse fell to 84 in minute. The patient's condition improved much during the next three days; he became more intelligent, motion on palsied side increased, pulse sank to 80. On fifth day he could say some short words, had more power of motion, and pulse was 72. The firmness of frontal bone was destroyed, and it could be depressed, and a little pus came from under the sequestrum. The seventh day after the operation, several pieces of bone were removed. Subsequently other sequestra were removed; the patient improved daily, soon became able to say several words, and recov-

ered power of motion. On twenty-first day he was able to sit up, and speak much better; the wound had, to a great extent, healed, though several splinters of bone remained to separate. On twenty-seventh day, there was recurrence of delirium, convulsions, and increase of right hemiplegia. The pulse was normal; there was a tendency to masturbation. There were no unusual appearances about the wound. The condition remained thus for several days, and then a slow improvement began. Fifty-one days after operation, several splinters of bone were removed. The patient became able to stand and walk, intelligence improved, but the hemiplegia remained unchanged, and the aphasia diminished slowly, so that after a lapse of several months he could only pronounce single words.

*Remarks.*—The advantages offered by the operation of trephining in the case I have above recorded were numerous.

In the first place, there was a certain degree of hope that there might be found a node springing from the inner table of the skull at a point corresponding to the one growing from the external table. But even in the probable event of not finding such a localized growth, it was most likely that there was diffused disease of the frontal bone and dura mater spreading from the base of the external node as a focus. It was thought, therefore, that it could not fail to be of advantage to remove so much of the source of irritation from the surface of the membrane. In addition to this, it was likely to be of benefit by diminishing, even if to a trifling extent, any pressure that might be caused by the thickening of the frontal bone and dura mater, as well as by allowing the discharge of any effusion that might have formed between the membrane and skull. A further object was to establish a process of healthy suppuration from the exposed surfaces of the dura mater, bone, and soft tissues around it, which might act as a derivative, and tend to prevent the spread and continuance of the inflammatory process in the surrounding bone and meninges.

Finally, it was evident that the rapid aggravation of the symptoms threatened a speedily fatal termination to the case, and that if time could be gained by the operation, a further opportunity would be afforded for pushing the use of antisyphilitic remedies, whose remarkable efficacy in the treatment of syphilitic cerebral lesions is so fully attested.

It may also be remarked, as a further point of evidence in favour of the operation, that in the only fatal case of the three reported by Mr. Henry Lee, the fatal result would seem to have resulted in great part from the fact that the external table of the skull remained entire after the inner one had been destroyed, thus giving an opportunity for the irritating pus to accumulate, to press upon the surface of the brain, and to induce inflammatory softening of its tissues. In estimating the results of the operation in the case I have reported, it seems to me impossible to avoid acknowledging that it was the chief means of saving the life of the patient. Examination of the portion of bone removed shows that it by no means embraced the entire extent of the disease; but its removal was followed by such rapid and positive amelioration of the symptoms present, as to convince all who saw the case that the operation exerted a most happy influence on the patient's condition. It may be thought that the operation might have been avoided had iodide of potassium been administered in doses much larger than were employed, viz., gr. x, four times daily. I confess that at the time this case was treated (1868), I was not so familiar as at present with the wonderful effects of very large doses (gr. xx, or xxx four times daily) of iodide of potassium in syphilis of the nervous system.

But, even with the encouraging experience of the past three years, I feel that W.'s condition was so desperate as to have, in all probability, resulted fatally, had not the operation of trephining been performed.

Dr. William Goodell remarked that this able paper of Dr. Pepper's reminded him of a case which came under his observation in Constantinople, but so many years ago that he was afraid he could not give the symptoms correctly, nor in the order of their sequence. An educated Armenian gentleman, with no known syphilitic taint, amiable, intelligent, and in easy circumstances, was attacked with severe hemicrania, limited, like clavus, to the middle of the right parietal bone. Without any relief whatever, quinia, blisters, setons, issues, mercury, iodide of potassium, frictions on the tongue and gums with the chloride of gold, etc., were prescribed, either by Dr. G. or by a large number of consulting physicians. He daily grew worse; became very irascible; began to stumble in his walk; aphasia soon gradually developed itself, finally dysphagia; and at last he became perfectly helpless, sitting on a sofa, with his head on a cushion, constantly moaning. From paralysis of the buccal muscles he was obliged to give up his pipe—considered in Turkey as a very fatal sign; but intelligence was not wanting, for he was capable of understanding, although not of articulating any but one or two guttural words. For a change of air he was removed to a village in the mountains, and, for several weeks, passed from Dr. G.'s observation. During this time an Italian surgeon, who had been roving over Turkey and Persia, cutting for stone and extracting cataracts, put up at this village, and succeeded in making a transient reputation by successfully opening a large psoas abscess, which no other physician would touch. He was accordingly called in, and, after vainly resorting to gamboge and other drastic cathartics, advised the trephine. The patient evidently understood this proposal, for he shook his head, and for several days kept repeating the word "Goo, Goo," sometimes shouting it at the top of his voice. In the Armenian language this word is a contraction for "come, come;" but when his wife and children gathered around him, in obedience to this supposed summons, he became very angry, and repeated the word with still greater energy. At last a quick-witted hunchbacked foster-brother suggested Dr. Goodell's name to him, when a loud outcry of assent, followed by a flood of tears, indicated that he had guessed right. A messenger was accordingly despatched for the doctor, who found the patient sufficiently conscious to evince great pleasure at his arrival, and to quietly submit to the operation, after it had been represented to him as his only chance. The Italian surgeon accordingly trephined the skull over the seat of pain, but there was not the thickening of the bone, nor the disease of the dura mater, which were anticipated. As this membrane pouted up through the opening, it was cut with a bistoury, when a considerable amount of limpid serum escaped. Almost immediately after the patient drew a long breath, and called out "Wife! bring some pipes"—or words to that effect—this being always the first act of courtesy to strangers. The family, who were in the next room, upon hearing these words—the first he had uttered for months—rushed in, and, after kissing the feet and still bloody hands of the physicians, embraced the patient in the most extravagant and affecting manner. The headache disappeared like magic, and, for two or three days, he was able to converse in an intelligible, although not in a grammatical manner. Strong hopes were entertained

for his complete recovery, but, unfortunately, hernia cerebri set in and carried him off.

Dr. WILLIAM PEPPER, in illustration of the influence of trephining upon epileptiform convulsions, even when no local lesion is discoverable, referred to a case of epileptiform convulsions, and unconsciousness in the intervals, following a blow on the head with a heavy whip-handle, which was relieved by trephining in conjunction with venesection. In this instance there was no observable lesion either of the skull or dura mater. The lad recovered completely. (Dr. J. Forsyth Meigs, *Penn. Hosp. Rep.*, vol. ii., 1869, p. 181.) A similar case was under the care of Mr. A. Poland, in Guy's Hospital, about the same time. A boy had severe epileptiform convulsions and unconsciousness, following a severe blow on the head. He was trephined, and recovered perfectly. No local disease could be found. (*Med. Times and Gaz.*, Sept. 26, 1868.)

Dr. JOHN ASHHURST, Jr., referred to the well-known fact that epilepsy was frequently cured temporarily by modes of treatment which produced strong and sudden physical or mental impressions, and alluded to the former use of tracheotomy in this affection.

Dr. W. PEPPER said that the cases of which he had spoken differed in many respects from ordinary true epilepsy, the convulsions being evidently epileptiform in character.

*Case of Anosmia.*—Dr. HAMILTON related a case similar to one, the account of which had attracted his attention in the No. of this Journal for April, 1870, p. 537, of the loss of the sense of smell following a blow on the occiput. He was called, one morning, to a druggist, who, after closing his shop on the previous evening, had fallen backward while conversing with a friend. He was slightly stunned at the time, but soon revived. Pain, however, disturbed him during the night, and there was much swelling at the back of the head. A brisk purge was ordered, with cups and cold locally. After five or six days of suffering, from severe pain in the occipital and frontal regions, and intolerance of light, complete recovery took place, but the sense of smell was gone ; and this condition persisted at the end of eighteen months. The cause of the fall was doubtful, and he was uncertain whether to refer the abolition of smell to it, or to the blow, or to some peculiar character and exceptional product of the ensuing inflammation. The patient had been healthy, and was not subject to fainting, but had been overtasked, mentally and physically, during several previous months.

*July* 6. *Simple Acute Meningitis.*—Dr. A. STILLÉ desired to call attention to some points in a case which was recently under his care in the Philadelphia Hospital, and which served to illustrate the general law that simple acute meningitis is never idiopathic. A man affected with chronic tubercular phthisis had been under observation for several weeks, and his pulmonary disease advanced slowly during this period, without presenting any peculiar features, and not even the local complications which are usual in that disease. One day he was suddenly seized with a chill, and, at the same time, with a severe pain in the head. Soon active delirium ensued, with such violence as to render the confinement of the patient necessary. He had fever, a hot head, and an excited expression. These symptoms were followed by coma and collapse, and death took place without having been preceded by paralysis of any part. On examination of the body after death, no tubercle, nor any granular

condition of the cerebral membranes was found; but the meninges of the convexity of the brain were very much injected, and the pia mater of the same part was filled with pus and lymph. The corresponding cortical substance was also softened.

*Sept.* 7. *Stöhrer's Zinc-carbon Battery.*—Dr. William Pepper exhibited this instrument, which is for office use, and gave the following description of it:—

The instrument is made by Dr. Emil Stöhrer, of Dresden, and is, in every respect, highly satisfactory. The battery is composed of 32 zinc-carbon elements, hung by copper wires from a central bar, which crosses the top of the box containing the apparatus; they can be lifted off and replaced at will, so as to be cleansed or have new plates attached. The points of the copper wires enter small holes in the bottom of a groove in the central bar, and come in contact with a metallic conductor, by which the connection is made between adjoining elements. The cells containing the acid solution (1 pt. $SO_3$ to from 8 to 12 pts. of water) are arranged on a shelf, which is raised by handles moving through two vertical slits cut in each end of the box. The battery is put into operation by raising this shelf until the zinc-carbon elements are immersed, and then securing the drawer in this position by a simple contrivance. The number of cells from which the current is collected can be regulated at will, by sliding a little block bearing the poles, to which the electrodes are to be attached, along the groove in the central bar before mentioned. There are two copper clips projecting from the under surface of this block, which press against the copper wires attached to the elements, and thus establish the connection. There is also a commutator arranged on this block, by which the direction of current may be changed at will. It is, of course, a simple matter to produce interruption in the current, by introducing a telegraph key into the circuit.

The intensity of the current is capable of ample variations, and ranges from a feeble current from 1 or 2 elements, which might be passed through an induction coil and used for faradization, to one from 30, which will rapidly produce an eschar. It is, however, impossible to regulate the quantity of current, except by altering the amount of fluid in the cell, because the shelf which holds the cells can only be secured at one height. A very trifling addition removes this difficulty, and I have had two slips of metal attached to either end of the box parallel to the slit through which the handle moves, and having little projections at short intervals from each other, across which metal bars are placed, which thus enables the shelf to be retained at the height which will secure any requisite amount of immersion of the plates in the acid liquid. The current is extremely constant, and the entire apparatus requires no other attention than renewing the solution at long intervals. To prevent the amalgamation of the zinc plates from being impaired, a small amount of sulphate of mercury is thrown into each cell. The physiological effects obtained by the current derived from the battery are very striking, and I have already obtained gratifying success in several cases by its use as a therapeutic agent.

*Oct.* 19. *A New Apparatus for Generating the Vapour of the Muriate of Ammonia.*—Dr. Harrison Allen exhibited an apparatus for this purpose, consisting of three flask-shaped vessels connected by India-rubber tubing, the first containing muriatic acid, the second liq. ammoniæ,

the third, an intervening one, holding a small quantity of water. A current of air, created by the use of Richardson's apparatus, is made to pass through a "yoke," which enables both the acid and ammonia vapour to be received in nearly equal amount in the third flask, whence the vapour of the nascent muriate of ammonia is conveyed through tubing. The plan, it will be observed, the speaker remarked, is essentially the same as that figured by Tröltsch. The greater convenience of the instrument under notice is expressed in its compactness and portability; the entire apparatus, with accessory flasks to prevent regurgitation of the fluid along the tubing when the fumes are subjected to some pressure, is supported on a small walnut stand, and can be covered by a glass $6\frac{1}{2}$ inches in diameter

To Dr. W. H. Trueman is due the credit of thus making the apparatus elegant in appearance and suited for office use.

It is more particularly in the treatment of subacute catarrh of the mucous tract of ear that the fumes of muriate of ammonia are useful. In such class of cases the instrument can be placed alongside the patient and the fumes readily passed through the Eustachian catheter to the desired position.

*Dec.* 15. *On the Growth of the Nails as a Prognostic Indication in Cerebral Paralysis.*—Dr. S. Weir Mitchell read the following paper:—

During the last winter I saw Mrs. B., æt. 56, immediately after an attack of cerebral palsy. This lady had been previously in good health, and free from disease of the heart. In the evening, after dinner, while reading, she complained of headache, which increased during an hour, and was followed by sudden loss of power, complete in the left leg, and incomplete in the face and arm of the same side. There was no sensory loss, and the articulation was but slightly altered. The only remote prodrome was pain at times in the two limbs affected, but chiefly in the leg—a symptom which she ascribed to rheumatism, but which, whatever its cause, I have met with many times in persons afterwards afflicted with palsy on the same side. Without being confident of its value as a precursory sympton, I may state that in these patients there was often no rheumatic pain in the opposite side, or elsewhere. Mrs. B. had but little intellectual disturbance, and no loss of consciousness. She slowly recovered, so as to be able to walk quite well; but the arm, after improving for two weeks, again became weaker, and finally, after some months, grew gradually well enough to be used in knitting or in holding a book. The finger-nails on the left side, which were previously healthy and rather large, became marked with deep serrations, crossing from side to side, and about one line apart. This peculiarity remained so long as she was under my care, the growth being much slower than that of the nails of the healthy arm. I regret that I did not examine the feet.

Struck by these peculiarities, I did not fail to study the nail-growth in the next case of like nature. In May, 1870, I saw a gentleman, æt. 47, the night of an attack of severe apoplexy. He was a large, ruddy person, and he also had no heart disease, but had been subject to great strain, both mental and physical. He had for a week slight defect of memory, great weariness, and occasional vertigo, with a hissing sound in the right ear, which was worse after meals. The attack came on while he was pulling off a boot at night. He fell, slightly convulsed and unconscious, and when I saw him was able to lift the palsied hand with the other to direct

my attention to it. His articulation was thick, his face strongly drawn to the left, and his tongue, when thrust out, deviated to the right side. The arm and leg were perfectly sensible, but he could stir neither of them. The leg recovered rapidly, and in a week he could walk a few steps, pushing a chair before him with the sound hand.

The morning after his attack, I stained four of the nails of the palsied right hand, down to the lower edge, with nitric acid, which tints these parts of a deep and quite lasting yellow, hoping thus to learn whether they would grow as fast as those of the other side. To my surprise, while the left healthy nails grew as usual, the right nails did not grow at all during three weeks. Then, and while the arm was throughout still motionless, the nails began to grow, as was shown by a narrow line of white below the tinted portions. Within a week after this the fingers became controllable by the will, and gradually the whole hand and then the arm was restored, so as to perform any except the most delicate tasks required of it.

Oct. 16, I attended Mr. C., æt. 46, who was suffering from great mental excitement concerning an election in which he was interested. His previous health was perfect. While lying in bed in the evening, somewhat drowsy from a small dose of morphia, he felt his right thumb drawn into the palm; then the forearm flexed strongly on the arm, while the right face twitched slightly, and in a few moments the right arm and leg became entirely paralyzed, as to motion only. There was no deviation of tongue or face, but he could not carry either eye fully to the right side. With these symptoms there was nearly complete aphasia, his only word being "yes." On the 17th he could make negative signs with his head, although still saying "yes" to every question. On the 18th he was able to say "yes," "no," and "certainly," and could repeat after me many simple words. Oct. 20. His right hand is slightly œdematous, and he now for the first time moves his toes. His vocabulary is enlarging, but he makes the usual curious blunders, and when trying to read aloud, frequently stops at long words and miscalls them; says he understands what he hears and reads.

The temperature of the right palm was at this time $95\frac{4}{5}^{\circ}$, left $97\frac{2}{5}^{\circ}$ F. Ever since the attack he complained of pain in the right shoulder and of the occasional spasmodic flexion of the thumb and fingers. At this time, the fourth day, the hand being moveless, I stained the nails, except that of the little finger, on both hands. Not the slightest growth took place on the palsied side until November 2, when, seeing a line of white above the quick, I risked the prediction to his wife that within a week he would begin to move the limb. On the fourth day after, the thumb recovered some slight power, and the rest of the limb rapidly followed it, so that every muscle was under control on November 9, although for some time the extensors of the fingers moved with difficulty, because of the continued but lessening spasm of the flexors. The whole history of these cases I have not given, thinking it enough to relate so much of them as was sufficient for my present purpose.

Perhaps, also, I ought to excuse myself for reporting but two distinct cases, in place of waiting until numerous opportunities enabled me to be more sure of the constancy of the facts related. Cases of this kind, however, seen early, may not recur very often under my own eyes, and I shall probably increase the chance of studying this curious symptom by making it public.

Even now it suggests some reflections which I must be pardoned for intruding, because they will to some extent guide any future observer.

I have been unable to find that this observation has been made before. In old cerebral palsies the nails very often become deformed, and even the muscles may undergo changes which are possibly due to the neural sclerotic alterations which sometimes come on after the part has been long disused. They are then the direct result of isolation from spinal trophic influence. In recent cerebral palsies there is often œdema, but no muscular atrophy; and it is, therefore, remarkable that the nails should ever suffer in their nutrition. It is still more curious, when we reflect that even in parts whose nerves are severed, the nails grow as usual, and that chiefly in partial nerve-wounds do we meet with clubbing or serration.

It seems as if the injury to the brain must have exerted an inhibitory influence, and the fact aids, to my mind, the view which I hold with many, that there are nutritive nerves. Theorists who follow Brown-Séquard, would probably regard the checked growth as due to a spastic contraction of the vessels feeding the nail, and as a vaso-motor nerve impression.

I cannot admit this, because no conceivable amount of such spasm could last long enough or be complete enough to cause the result without making a visible difference in the tint of the nail and the thin parts at its matrix; and these remained much as usual, perhaps even a little redder than common. To test this view, I faradized with a secondary current and dry wire brush two of the nails daily, giving great pain and intensely flushing them. They were also kept thrice a day, for a half hour, in hot water, so as to flush them as much as possible. My patient, an intelligent person, being much interested in the question, submitted readily to this treatment, but no more growth took place in these nails than in the others. I have noted the lower temperature in the last case; but in hands cut off from all nerve connection, it is still slower, and yet the nails grow. It does look, therefore, in this case, as if some influence was at work here which did not act through a change in the vascular supplies. It is a point in favour of trophic nerves.

Other and most interesting questions also present themselves. The re-growth preceded the return of will power. If this should prove constant or common, it will certainly help us to answer the inevitable query as to whether the arm will recover at all, and how soon.

It is, of course, desirable to learn how often this check of nail-growth occurs—whether in all cerebral palsies or only in certain ones—whether, in a word, it relates itself to particular brain regions, and is a direct effect, or arises from the spinal shock which these brain injuries occasion.

I trust that I have been able to show, therefore, that this apparently trifling symptom may open the way to the solution of very important questions, and is certainly not devoid of interest for the most purely practical among us.

1871. *Jan.* 18. *Physiological Action of the Nitrite of Amyl.*—Dr. Horatio C. Wood called attention to this article, which had been used more particularly for the relief of angina pectoris. Certain cases have been reported of intense cardiac pain, in which chloroform caused only a temporary relief, but in which cases nitrite of amyl had produced an immediate and permanent effect. This substance, he said, had some very remarkable physiological properties which had tempted him to

an investigation, which compelled him to form conclusions somewhat different from those of Dr. B. W. Richardson. Dr. Richardson says that the first prominent effect of this drug upon animals is a great excitation of the motor system. Dr. Wood did not find such to be the case. He had given it in a large number of cases to pigeons, cats, and dogs, and in the majority of instances it produced a state of gradually increasing paresis. Occasionally, however, the steady, onward course of weakening is interrupted by convulsions, especially in pigeons. One of the most marked and peculiar effects of the drug when taken into the system is the prevention of the change of venous into arterial blood. The blood in all the vessels very soon becomes of the same, or nearly the same hue, and he had found that this was not owing to any action on the nervous system, for it is impossible to oxidize, or at least to produce the change of colour commonly attributed to oxidation, in venous blood which has been drawn from the body, and had a portion of the amyl salt added to it.

He had investigated its action upon the nervous system very carefully, and found that it does not destroy the conducting power of the nerve-trunks, although it impairs that power. He had poisoned a frog with nitrite of amyl and exposed the crural nerves, and found that the nerves responded to strong stimuli, which caused motion in the lower muscles of the leg, but he always failed in such cases to produce reflex action. Feeble stimulation failed to elicit muscular contraction, and while the power of the muscle to contract is impaired, it is never destroyed except where the nitrite of amyl is applied locally. So far from being a powerful cardiac stimulant, it is in animals a direct depressor to the circulation. It increases the number of heart-beats, but it never increases the force of its action. The force of the individual heart-beats is not much affected early in the action of this drug. There are several reasons for supposing that it causes dilatation of the capillaries. There is produced, when it is first taken into the animal in any way, lessened arterial pressure, probably by such dilatation, and by and by the heart itself begins to slacken in power. When this substance is applied to muscles of organic life it appears to act precisely as it does on the voluntary muscles. One of the most curious effects the speaker knew of is its local action. It is not an irritant, and yet when kept long in contact with a tissue it produces death of that tissue, and this applies equally to muscular and nervous tissues. In the majority of cases, when it is simply thrown hypodermically into the muscles there is but little effect, but if kept long in contact with the muscle it produces complete death, local putrefaction following.

In the case of this drug, we appear to be on the very verge of settling how at least one medicinal agent acts upon the tissues of the body. This drug has the curious chemical property of checking oxidation. He had placed a piece of phosphorus in a jar, put the jar in water raised to 112° Fah., taken it into a dark room, and the phosphorus was seen to glow most vividly. He then put five drops of nitrite of amyl into the bottle, and instantly the phosphorus was extinguished. Here oxidation is evidently arrested, and there is apparently, as already stated, a similar action on the blood in the body. It would seem, then, that nitrite of amyl acts on the system by checking the chemical changes which are necessary to the exercise of any function whatever. If this be so, we we may anticipate its influence on the animal temperature, and on the elimination of carbonic acid gas. It lowers the animal temperature to a degree which is almost unheard of in the history of drugs. He had

witnessed a fall of 12 degrees in the temperature of an animal which had been given nitrite of amyl, and yet death was not produced. The animal seemed perhaps a little giddy, but otherwise just as before taking the drug. He had not as yet had time to take the next step, to discover whether it arrests the elimination of carbonic acid. If this experiment should prove what he supposed it would, it would furnish almost absolute proof that the nitrite of amyl does prevent tissue change. Then every man can draw his own inference as to whether this is the actual cause of its action on the body.

These investigations strike a heavy blow at certain theories in regard to the cause of the action of anæsthetics. It has been asserted that the cause of anæsthesia was the fact that the drug prevented oxidation. Now, here we have a drug which appears to and does prevent oxidation, and yet the very last tissue to be affected is the brain-tissue, the animal preserving its consciousness to the very end. Consciousness and sensibility are two of the last functions which are annihilated by the nitrite of amyl.

*Large Stone removed from Female Bladder.*—Dr. W. F. Atlee presented a stone removed by rapid dilatation of the urethra, from the bladder of a woman.

The stone is a hard one, $3\frac{1}{10}$ inches in its greatest circumference, and $2\frac{9}{10}$ inches in its smallest; its weight is 220 grains. The patient was seventy-three years of age, and submitted to the operation on account of the violence of the pain, which was almost incessant. To dilate the urethra, the patient was rendered insensible by the inhalation of chloroform, and Holt's dilator for the sudden cure of stricture was used. Afterwards an ordinary dressing forceps was passed and withdrawn more and more opened, some half a dozen times. There was some hemorrhage for a day or two after the operation, and, of course, considerable soreness was felt for some five or six days. There was, however, never at any time any difficulty in retaining the urine in the bladder. The operation was performed last August, more than four months ago.

*Complete Excision of the Astragalus and Os Calcis.*—Dr. T. G. Morton presented a case of excision of these bones, with the following notes:—

D. C., aged 13, was admitted into the Pennsylvania Hospital Sept. 27, 1869.

He had received an injury of his left heel in January, 1868, an abscess quickly formed, and the foot was much swollen. The pus found an exit after several weeks, and sinus after sinus formed, accompanied by severe pain. At the time of his admission, four of these fistulous tracks existed, all communicating with the os calcis; and when probed, it was found that a considerable extent of the cancellated structure of this bone was involved.

The usual operation was performed Oct. 2, 1869. The os calcis and astragalus were alike involved, and both were removed, no arteries required ligation; and the limb and foot were placed in a pasteboard splint. A very perfect recovery followed, both as regards motion in the new joint, and in the usefulness of the foot, which was shortened about one inch.

*Feb.* 1. *Report on Meteorology and Epidemics.*—Dr. Wm. L. Wells read the following report on meteorology and epidemics for 1870 :—

Before entering on my report on meteorology for 1870, I must premise by stating that in the calculation made in my report for 1869 allowance must be made for the fact that at that time a census of Philadelphia had not been taken for nearly ten years, and that, consequently, the number of inhabitants could not be arrived at accurately. I made an over-estimate, as is shown by the fact that, by the census taken last year, the population of Philadelphia was then only 674,022. A correction of the estimate made in last year's report will therefore be necessary. The error was caused by my having computed the population on the theory that the rate of increase in the past ten years had been equal to that of the preceding ten years, whereas (contrary to general expectation) it was much less.

The total number of interments returned by the Board of Health for 1870 was 16,750. This indicates an increase of 1964, or 13.28 per cent. over 1869, and gives one death to every 40.24 inhabitants, or 2.41 per cent. Deducting those who died elsewhere, and were counted because buried in Philadelphia (611 in number), we have 16,139—one death in 41.76, or 2.39 per cent.

Of the deaths recorded, there were 8717 males and 7963 females, showing an excess of 824 males, or 10.35 per cent. The average of deaths for each quarter of the year is 4187 ; for each month, 1396 ; for each day, 46. The first quarter there were 4401 deaths, the second 4245, the third 4902, and the fourth 3202. The third quarter, which shows the highest mortality, had 53 per cent. more deaths than the fourth quarter, which had the fewest deaths.

The mortality at the Blockley Hospital, connected with the Almshouse, was 599. That of the coloured population of the city, 1081.

When we compare the total mortality in 1870 with that of the nine preceding years, we find that in

| | | |
|---|---|---|
| 1861 | there were | 14,468 deaths. |
| 1862 | " | 15,097 " |
| 1863 | " | 15,788 " |
| 1864 | " | 17,582 " |
| 1865 | " | 17,169 " |
| 1866 | " | 16,803 " |
| 1867 | " | 13,933 " |
| 1868 | " | 14,693 " |
| 1869 | " | 14,786 " |
| 1870 | " | 16,750 " |

showing that in spite of the increase of 13 per cent in the mortality of 1870 over that of the preceding year, there yet remain three years—1864, 1865, and 1866—with a still greater mortality.

One of the diseases which contributed the most to the increased number of deaths in 1870 was scarlatina, which caused 956 deaths, 157 more than in 1869, and far more than in any preceding year. This fearful scourge of the young moderated in violence, however, very much in the last few months of the year. In May it caused 166 deaths, and in the following months 90, 53, 35, 16, 14, 26, and 31.

A classified table is appended, showing the mortality from all the principal causes of death as compared with 1869 ; and another, showing the mortality in the different months and at different ages.

The meteorological statistics of this report are taken from the record kept at the Pennsylvania Hospital.

The year 1870 was remarkable for its high temperature, and this was caused not only by an increase in the temperature of a few months, but the thermometer rose unusually high in both winter and summer—the only month in the year which was much colder than usual being March, the mean temperature of which was 37°.87 Fahr., or $3\frac{1}{3}$° below the average, and 3°.20 below the mean of January, which last month differed more from the average temperature than any other in the year, being 9° above the average. It was the warmest January since 1790. In consequence of the unusual heat many plants began to grow, and were injured by the first severe frost in February.

The mean of the winter of 1869–70 was 37°.17. It was the warmest winter since 1828.

On the 8th of May there was a violent hail-storm, which did an immense amount of damage. The hail-stones were very large; one which fell at the Pennsylvania Hospital was found to weigh 1 oz. $5\frac{1}{2}$ dr. troy.

The summer of 1870 was unparalleled for its high temperature, as may be seen from the following table, giving the heat of the hottest summers since 1825.

The mean of the summer of 1825 was 74°.$83\frac{1}{3}$ Fahr.; that of 1831 was 77°.$33\frac{1}{3}$; of 1838, 75°.$66\frac{2}{3}$; of 1856, 75°.$58\frac{1}{3}$; and of 1870, 78°.88. Last summer was, therefore, more than a degree and a half hotter than the hottest of all before, and more than 6° hotter than the average for thirty-nine years, which is 72°. In 1798 we had a hotter July, the mean being 81°, to 80°.63 in 1870. We had a hotter August in 1863, when the mean was 79°.46, to 78°.77 in 1870. We have, however, never had such a hot June (the mean was 77°.35), and never such a hot summer, taking the mean of the three months. During June the thermometer rose above 90° on nine different days, during July on thirteen different days, and during August on eleven different days—a total of thirty-three days, or more than one-third of the entire summer season. There were ten days in which the thermometer reached 94°, and on the hottest day (July 17th) it reached 97°.

This period of unusual heat was extended over both the months immediately preceding and those succeeding the summer. There was no frost from the first of April until November.

The diseases, accordingly, which are either directly caused by a high temperature, or which, although they have not heat for their cause, require it as one of the conditions for their development, we shall find caused many more deaths than usual. There were 52 deaths from sunstroke to 12 the year before, and 1002 deaths from cholera infantum to 885 the year before—the deaths from this latter cause being found to increase or diminish in number as the thermometer rises or falls.

In August and September there were a few cases of yellow fever, a disease from which we had been free for many years. Before any cases originated in the city, there was a good deal of the disease at the Lazaretto, several miles down the Delaware, caused by the arrival there, June 29th, from Jamaica, of the brig Home, on which there had been during the voyage two cases of yellow fever, one of them fatal.

On her arrival off the quarantine station, the brig anchored about 400 yards from the landing, was thoroughly disinfected, and three lighters were employed to discharge the cargo. On July 14th her position was

changed to the adjacent government wharf, 300 yards from the hospital building, 250 yards from the physician's house, and only 140 yards from a house occupied by a family named Pepper. While the brig was in her first position, and for three days afterward, eighteen days in all, eight cases of yellow fever originated, the first being the pilot of the brig Home, and the others being the second mate and two sailors of the brig, and four persons connected with the lighters used for unloading the cargo. Of these eight cases, four died. This brings us to July 17th, two days before the completion of the discharge of the cargo; and only one mild case of the disease occurred subsequently in any of those who were immediately connected with the vessel.

On the 22d of July, five days after the brig moved from its original position to one close to the shore, two cases of fever occurred in the house nearest to it (140 yards off), and toward which the wind was blowing from the ship. Another case occurred on the following day, another August 1st, two more August 6th, and the last on the 8th of August, making in all seven cases, of which five were fatal, in a household of thirteen. Even the other six were a little sick at the same time, but without any defined symptoms of the disease.

Dr. Thompson, the Lazaretto physician, was attacked with yellow fever August 2d, and died on the 10th. He, of course, had been exposed to the cause of the disease in its original source, the Home, as well as in his own house, 250 yards from its new position, and in the quarantine hospital, which was 50 yards further off. On the same day on which he was attacked, the wife of the steward of the hospital was taken sick, living only five days afterward; and on the 3d of August (the following day) another case, likewise fatal, originated in the hospital. On the 4th and 5th of August, the wife and daughter of Dr. Thompson were taken sick, but both recovered, and on the 6th three more cases originated in the hospital, all of whom died. After this, the force of the disease would seem to have moderated, as only four more cases originated in the quarantine grounds, and only one of these died, and he a man already broken down by a recent attack of smallpox. The brig Home had left its position at the wharf, and removed to one much further off some days before this time.

We see here, therefore, in a population of about one hundred exposed to the disease, twenty-eight cases,[1] of which sixteen proved fatal, and this without counting the two cases of the disease which occurred at sea.

Of the above cases, seven were attended, during part of the disease, in various parts of the city of Philadelphia—in Kensington, West Philadelphia, etc.—and one was treated for a day or two in Swanson Street, near Shippen Street wharf, (where the fever afterward broke out,) leaving there July 19th, when he was removed to the Municipal Hospital, in the extreme northwestern part of the city, where he at last recovered. It was not, however, until August 8th, three weeks after this, that the first case of yellow fever originated in the city. This case was that of a custom-house officer, who had been on some vessels which had come from infected ports, on none of which, however, any cases of yellow fever had occurred. He had also been in the neighbourhood of one of the

[1] Only one of those attacked was coloured, and he recovered, although there were in all seventeen coloured persons exposed, and most of them in the brig itself.

lighters which had on it part of the cargo of the brig Home, but it was one on which no cases of fever had occurred. The brig Home itself was anchored half a mile from Shippen Street wharf (where this man was taken sick) for one night, August 4th; but it was to the windward, and consequently no very satisfactory explanation can be given of the origin of the disease in this case. There were in all, within half a mile from the place where this man was attacked and between August 8th and September 8th, seventeen cases, thirteen of which proved fatal. They were all in one of the most crowded and filthy portions of the city, but no two cases occurred in the same house, and no case can be traced to another as its cause.

Yellow fever, therefore, as we see from last summer's cases, will originate and spread in a city in a manner very different from such a disease as smallpox. A man who has been exposed to the yellow-fever atmosphere from a vessel several miles off at quarantine is sick for a day or two in Swanson Street, and three weeks afterwards, the vessel itself, thoroughly disinfected, is anchored for one night at a distance of half a mile from the same street, with the wind blowing off shore. These are the conditions; let us look at the results: Seventeen cases and thirteen deaths occur, and all within half a mile from the place where the first case occurred, and less than a mile from the place of anchorage of the brig. But when we look more closely, we find that no one of the five men connected with the brig at that time was taken sick, no one in either of the two houses in which the first case lived during the progress of the disease was taken sick, no one in any of the adjoining houses, and that no two of all the cases were in the same house. On the other hand, they were all exposed to an atmosphere which for weeks had been excessively hot, and that in a neighbourhood one of the worst in the city for overcrowding and filth. We cannot but be struck, therefore, with the analogy of this disease with the malarial fevers,[1] which strike down persons exposed to the malarial emanations—whatever they may be—independently of contact with any other person already diseased; and we must also observe the marked difference between it and a contagious disease like smallpox, which can in such a vast majority of cases be traced from house to house, or from man to man, the poison multiplying itself within the system, so that one drop of the virus placed under the skin of a healthy man will cover him in a few days with pustules enough to infect a city.

The peculiar poison of smallpox infects, and while infecting, multiplies itself, and that in any climate or season of the year. The poison or germ of yellow fever is indeed equally fatal, but finds the most favourable conditions for propagation, not in the human body, but outside, in filth, with animal excretions exposed to great heat.

An epidemic which created probably less alarm than that of yellow fever, but caused in the past year a much greater mortality, was that of relapsing fever. It was prevalent chiefly in the portion of the city between Lombard and Catharine and between Fifth and Eighth Streets, although it was found to a certain extent in localities very far removed from there. Dr. Goodman, the port physician of Philadelphia, estimates the number of cases of this disease at about 5000, with 200 deaths up to September 1st, although only 152 deaths were reported to the Board of Health from that cause up to that time.

[1] Of course, analogy only, and not identity, is here meant.

This fever occurred, as an epidemic for the first time during the past year, in Philadelphia and also in New York.

Relapsing fever had, however, been previously seen in Philadelphia. The first case was recognized by Dr. George B. Wood, Emeritus Prof. of Theory and Practice of Medicine in the University of Pennsylvania. It was in a patient who had come here from England, through Canada. Subsequent to this; in June, 1844, there were fifteen steerage passengers who had come here from Ireland in a Liverpool packet, and were treated for this disease in the Blockley Hospital by Drs. Wm. Byrd Page and Meredith Clymer, Dr. Mayburry being the senior resident physician of the hospital at the time. These cases were all reported in the *American Journal of Medical Sciences.* Dr. Wm. Pepper had several cases from the same vessel under his charge at the Pennsylvania Hospital at the same time. The disease, however, at that time did not spread. It being, therefore, practically unknown to the profession here, it is not to be wondered at that it was not recognized at first; at least, by the majority of physicians. In the *American Journal of Medical Sciences,* October, 1870, Dr. John S. Parry gives an account of several cases—the first of the present epidemic. The first case of all occurred in a narrow, poorly ventilated and overcrowded alley near Third and Arch. The date was September 8, 1869. Dr. A. Clark, in the March number of the *N. Y. Medical Record,* reports the earliest cases which occurred in New York. They were nearly two months subsequent to the cases of Dr. Parry. The disease was, however, generally recognized as an epidemic first in New York—probably, as Dr. Goodman remarks, on account of the greater facilities the New York Board of Health have of becoming early acquainted with contagious diseases, through their admirable system of medical sanitary inspection.

Although relapsing fever is undoubtedly contagious, yet the first cases which occurred in Philadelphia were scattered about in portions of the city far apart from each other, at nearly the same time, and without any known connection. This is analogous to the manner in which cholera often spreads. It would seem as if an epidemic atmosphere, containing the germs of the disease, had passed over the Atlantic Ocean, and, without being brought by any ship, had gradually settled down in this country, increasing slowly in power. Dr. Harris, however, of the New York Board of Health, thinks that the disease was brought there in ships, and spread by contagion only.[1]

The first death reported to the Board of Health in this city as from relapsing fever in 1870 was on the 26th of February; it occurred in Frankford. The second and third deaths were at the Almshouse. In the week ending March 26th there were 4 deaths, all in the Almshouse; in the next week, 8 deaths, 5 of them in the Almshouse and 3 scattered —2 in the Tenth Ward, three or four squares apart, and 1 in the Second Ward. In the week ending April 16th there were 4 deaths—3 in the Almshouse and 1 in the Third Ward. Most of the cases which occurred in the degraded portion of the city, where the disease was most severe, were removed either to the Philadelphia Hospital, Blockley, or to the Municipal Hospital. The most active measures for disinfection and cleansing were taken by the Board of Health, and by the kindness of Dr. Swann, the energetic president of the Fountain Society, several fountains

[1] See Medical Record, March 1, 1870.

were placed in the neighbourhood where the disease most prevailed, thus improving very much the sanitary condition of the locality. I cannot conclude my report on the subject better than by giving an extract from the excellent report of Dr. Goodman to the Board of Health.

"The origin of the fever in this city must remain a matter of speculation. The causes of its becoming epidemic were more apparent; overcrowding, filth, destitution, impoverished and irregular diet, and intemperance, formed the conditions necessary to the propagation of the disease. The fever was felt most severely where these conditions were most decided.

"In regard to nationality, the fever was almost entirely confined to coloured and Irish, or the descendants of the latter. During June and July, of 295 patients sent to hospital, only 63 were born in the United States, and these mostly of Irish parentage, 131 were born in Ireland, 3 in Germany, and 128 were coloured.

"In regard to the contagious nature of relapsing fever, I have every proof necessary to establish it beyond a doubt. I will give a few examples. Lodging house, 707 South Broad Street, locality healthy, house filthy to an extreme degree, third story rooms (one 8 by 12, and one 12 by 18), occupied by nine grown persons. The wife nursed a brother sick with relapsing fever, who was brought from Alaska Street, where the disease was most severe. Five of the nine contracted the fever after a variable period of incubation, and all were finally sent to the hospital. A healthy girl from the neighbourhood visited these rooms while the sickness continued, contracted relapsing fever, was isolated, and no contagion followed. House No. 1121 Christian Street was occupied by 18 persons, in small rooms, locality healthy, house overcrowded and dirty. The first case was a young man who was in the habit of staying out from Saturday until Monday. He came home on Monday with fever; it went through his family of six, then to other families, until thirteen had the disease. The last was a healthy woman who was hired to clean the house July 5th, and on the 9th was sent to the hospital with fever after four days' incubation. Numerous other instances, and those of doctors, nurses, attendants, and ambulance drivers, who contracted the disease, might also be cited to prove its contagious properties."

I append a table of the deaths from relapsing fever, taken from the reports of the Board of Health.

| | Total deaths. | Males. | Females. | Coloured. | Under 2 years. | 2 to 5 | 5 to 10 | 10 to 15 | 15 to 20 | 20 to 30 | 30 to 40 | 40 to 50 | 50 to 60 | 60 to 70 | 70 to 80 | In the Almshouse. | In the Municipal Hospital. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| March, | 15 | 14 | 1 | 8 | .. | .. | .. | 1 | 1 | 6 | 5 | 2 | .. | .. | .. | 11 | .. |
| April, | 10 | 8 | 2 | 6 | .. | .. | .. | .. | .. | 3 | 2 | 1 | 3 | 1 | .. | 7 | .. |
| May, | 46 | 37 | 9 | 32 | .. | .. | .. | 1 | 1 | 7 | 15 | 12 | 4 | 5 | 1 | 20 | 16 |
| June, | 46 | 28 | 18 | 30 | .. | 1 | 1 | 3 | 3 | 7 | 10 | 7 | 8 | 6 | .. | 6 | 27 |
| July, | 26 | 19 | 7 | 17 | 1 | .. | .. | .. | 3 | 4 | 7 | 8 | 3 | .. | .. | 3 | 14 |
| August, | 9 | 7 | 2 | 7 | .. | .. | .. | 1 | .. | 4 | 3 | 1 | .. | .. | .. | .. | 7 |
| September, | 2 | 2 | .. | 2 | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | 1 | 1 |
| October, | 4 | 3 | 1 | 2 | .. | 1 | .. | .. | .. | 1 | 2 | .. | .. | .. | .. | 1 | 1 |
| November, | 2 | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | 1 |
| December, | 2 | 2 | .. | 2 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | 2 | .. |
| Total, | 162 | 121 | 41 | 107 | 1 | 2 | 1 | 6 | 8 | 35 | 45 | 33 | 18 | 12 | 1 | 51 | 67 |

In conclusion, I would remark that while in London, Paris, and Vienna, the maximum of intensity of zymotic diseases is in winter, and the minimum in summer; in Philadelphia, in 1870, this was not the case, the maximum being in the spring, and that not only in these diseases taken collectively, but in most of the principal ones, including measles and scarlet fever taken singly. The minimum in Philadelphia was in the autumn, October showing the least mortality, and next to that, September.

Of the individual zymotic diseases, puerperal fever alone shows a greater mortality in winter than in any other season, and that only exceeds by one the mortality in spring.

*Zymotic Diseases.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Typhoid fever | 388 | 412 | Scarlatina | 799 | 956 |
| Typhus (spotted, &c.) | 88 | 109 | Pertussis | 74 | 105 |
| Malarial fever | 50 | 59 | Diphtheria | 175 | 172 |
| Yellow " | — | 13 | Croup | 237 | 316 |
| Puerperal fever | 18 | 29 | Erysipelas | 50 | 58 |
| Relapsing " | — | 162 | Cholera | 9 | 7 |
| Variola | 6 | 9 | | | |
| Varicella | 2 | — | Total | 1981 | 2455 |
| Rubeola | 85 | 48 | | | |

*Results of Poisoning.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Hydrophobia | 7 | 1 | Mania-a-potu | 48 | 56 |
| Alcoholic intoxication | 42 | 38 | Syphilis (adults) | 8 | 13 |
| | | | Total | 105 | 108 |

*Alteration of the Blood.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Anæmia and chlorosis | 22 | 22 | Pyæmia | 39 | 43 |
| Leucocythæmia | — | 3 | Scurvy | 1 | 1 |
| | | | Total | 62 | 69 |

*Constitutional Diseases.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Rheumatism | 24 | 14 | Tubercles of mesentery | 631 | 698 |
| Gout | 3 | 3 | Cancer | 232 | 261 |
| Tuberculosis of brain (including dropsy of brain) | 174 | 133 | Scrofula | 85 | 80 |
| Tuberculosis of lungs (including cases reported as hemorrhage from lungs) | 2040 | 2374 | Syphilis (constitutional) minors | 13 | 10 |
| | | | Total | 3202 | 3573 |

*Diseases of the Nervous System.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Inflammation of brain | 367 | 418 | Softening of spinal cord | 2 | — |
| Apoplexy | 181 | 240 | Paralysis | 206 | 226 |
| Congestion of brain | 316 | 378 | Tetanus | 28 | 44 |
| Effusion on brain | 50 | 56 | Epilepsy | 25 | 34 |
| Other, or non-specified disease of brain | 72 | 112 | Insanity | 5 | 7 |
| Softening of brain | 57 | 79 | Convulsions | 647 | 733 |
| Inflammation and congestion of spine | 4 | 11 | Puerperal convulsions | 25 | 23 |
| Disease of spine (kind not stated) | 22 | 23 | Hysteria | 1 | — |
| | | | Chorea | — | 5 |
| | | | Total | 2008 | 2389 |

*Diseases of the Circulatory System.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Inflammation of heart | 34 | 36 | Syncope | 4 | 4 |
| Fatty degeneration of heart | 11 | 13 | Aneurism | 5 | 13 |
| Dropsy of heart | 35 | 33 | | | |
| Neuralgia of heart | 24 | 15 | Total | 587 | 618 |
| Other, or non-specified diseases of heart | 474 | 504 | | | |

### *Diseases of the Respiratory System.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Disease of glottis | 1 | 2 | Dropsy of chest | 58 | 56 |
| Laryngitis | 30 | 32 | Asthma | 31 | 24 |
| Ulceration of larynx | 2 | — | Pleurisy | 16 | 17 |
| Obstruction of trachea | 1 | — | Emphysema | 10 | 10 |
| Bronchitis | 165 | 161 | Empyema | 1 | 2 |
| Catarrhal fever | 22 | 19 | | | |
| Congestion of lungs | 151 | 154 | Total | 1296 | 1289 |
| Pneumonia | 808 | 812 | | | |

### *Diseases of the Digestive System.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Tonsillitis and disease of throat | 14 | 28 | Dyspepsia | 1 | 2 |
| Sore mouth | 11 | 10 | Obstruction of bowels | 38 | 33 |
| Stricture of œsophagus | 3 | 5 | Peritonitis | 100 | 95 |
| Dysentery | 93 | 82 | Hernia | 18 | 15 |
| Ulceration of stomach and bowels | 19 | 20 | Worms | 2 | 1 |
| Inflammation of stomach and bowels | 223 | 281 | Hepatitis and congestion of liver | 58 | 42 |
| Other diseases (unspecified) of stomach and bowels | 12 | 22 | Other (or unspecified) diseases of liver | 59 | 89 |
| Diarrhœa | 175 | 191 | Jaundice | 27 | 33 |
| Congestion of bowels | 2 | 3 | Disease of spleen | — | 2 |
| Cholera infantum | 885 | 1002 | Dropsy (abdominal and varieties not specified) | 259 | 272 |
| Cholera morbus | 52 | 38 | | | |
| Hemorrhage from stomach and bowels | 13 | 11 | Total | 2074 | 2277 |

### *Diseases of the Genito-Urinary Apparatus.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Nephritis | 23 | 24 | Disease of prostate gland | 3 | 1 |
| Diabetes | 21 | 18 | Stricture or rupture of urethra | 1 | 1 |
| Degenerations of kidneys (albuminuria, &c.) | 35 | 54 | Stone in bladder and gravel | 1 | 3 |
| Other diseases of kidneys (kind not stated) | 66 | 60 | Disease of uterus | 18 | 35 |
| Suppression of urine | 2 | 1 | Disease of ovary | 8 | 5 |
| Dræmia | 17 | 21 | Died in childbed | 20 | 12 |
| Diseases of bladder | 19 | 35 | Total | 234 | 270 |

### *Congenital Debility and Malformation.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Malformation | 15 | 21 | Inanition[2] (under 1 year) | 217 | 214 |
| Debility[1] (under 1 year) | 374 | 433 | Cyanosis and asphyxia | 124 | 97 |
| | | | Total | 730 | 765 |

### *Diseases of Skin.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Eczema | 2 | 1 | Hives | — | 2 |
| Disease of skin (kind not stated) | — | 2 | | — | — |
| | | | Total | 2 | 5 |

| | 1869. | 1870. |
|---|---|---|
| [1] Debility (over 1 year) | 262 | 376 |
| [2] Inanition (over 1 year) | 65 | 76 |

*Diseases of Bones.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Inflammation of bones | 1 | — | Caries | 16 | 8 |
| Necrosis | 5 | 5 | Disease of hip | 9 | 7 |
| | | | | — | — |
| | | | Total | 31 | 20 |

*Violent Deaths.*

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Burns and scalds | 68 | 58 | Murder | 18 | 17 |
| Drowned | 103 | 149 | Poisoning | 16 | 6 |
| Casualties | 187 | 191 | Rupture of spleen | 1 | — |
| Exposure | 7 | 4 | Shock | 4 | 2 |
| Fractures | 31 | 14 | Struck by lightning | — | 2 |
| Gunshot wounds | 7 | 13 | Strangulation | 6 | 6 |
| Wounds (nature not specified) | 5 | 3 | Suicide | 45 | 25 |
| | | | Suffocation | 20 | 14 |
| Heat fever (sunstroke) | 12 | 52 | | | |
| Hanging | 1 | — | Total | 531 | 556 |

| | 1869. | 1870 |
|---|---|---|
| Stillborn | 790 | 822 |

These tables fail to account for 1082 deaths, 117 of which were reported as unknown to the Board of Health, and some were from the following more or less uncertain causes.

| | 1869. | 1870. | | 1869. | 1870. |
|---|---|---|---|---|---|
| Congestion (of what not stated) | 7 | 6 | Compression of brain and spine | 23 | 19 |
| Gangrene (of what not stated) | 36 | 38 | Concussion of brain | 1 | 20 |
| Hemorrhage (of what not stated) | 54 | 59 | Cramps | 23 | 21 |
| Ulcers, abscess, and boils (of what not stated) | 87 | 79 | Old age | 480 | 588 |
| | | | Teething | 32 | 44 |
| | | | Tumours | 21 | 38 |

| Months. | Total. | Males. | Females. | Adults. | Minors. | Boys. | Girls. | Stillborn. | | | Under 1 year. | 1 to 2 years. | 2 to 5. | 5 to 10. | 10 to 15. | 15 to 20. | 20 to 30. | 30 to 40. | 40 to 50. | 50 to 60. | 60 to 70. | 70 to 80. | 80 to 90. | 90 to 100. | 100 to 110. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Males. | Females. | Total. | | | | | | | | | | | | | | | |
| January, | 1287 | 650 | 637 | 679 | 608 | 311 | 297 | 43 | 27 | 70 | 280 | 73 | 142 | 58 | 18 | 37 | 143 | 105 | 98 | 103 | 93 | 78 | 51 | 8 | |
| February, | 1348 | 723 | 625 | 670 | 678 | 384 | 294 | 43 | 32 | 75 | 310 | 112 | 134 | 68 | 21 | 32 | 126 | 112 | 116 | 98 | 96 | 75 | 34 | 12 | 1 |
| March, | 1766 | 932 | 834 | 871 | 895 | 483 | 412 | 54 | 33 | 87 | 417 | 126 | 192 | 78 | 37 | 45 | 188 | 151 | 150 | 105 | 117 | 101 | 44 | 15 | |
| April, | 1338 | 723 | 615 | 647 | 691 | 384 | 307 | 34 | 20 | 54 | 308 | 95 | 170 | 62 | 28 | 28 | 158 | 124 | 104 | 81 | 64 | 80 | 26 | 9 | 1 |
| May, | 1635 | 871 | 764 | 829 | 806 | 427 | 379 | 58 | 32 | 90 | 354 | 110 | 190 | 75 | 33 | 44 | 167 | 173 | 141 | 106 | 104 | 92 | 38 | 6 | 2 |
| June, | 1272 | 655 | 617 | 603 | 669 | 346 | 323 | 41 | 30 | 71 | 359 | 80 | 106 | 58 | 34 | 32 | 123 | 130 | 84 | 85 | 89 | 56 | 31 | 5 | |
| July, | 1916 | 1041 | 875 | 731 | 1185 | 637 | 548 | 31 | 27 | 58 | 771 | 195 | 95 | 46 | 34 | 44 | 136 | 169 | 112 | 96 | 102 | 71 | 31 | 13 | 1 |
| August, | 1891 | 971 | 920 | 656 | 1235 | 630 | 605 | 46 | 32 | 78 | 779 | 242 | 92 | 45 | 23 | 54 | 149 | 134 | 99 | 87 | 74 | 62 | 44 | 7 | |
| September, | 1095 | 556 | 539 | 521 | 574 | 283 | 308 | 33 | 16 | 49 | 308 | 112 | 64 | 31 | 20 | 39 | 103 | 90 | 87 | 72 | 71 | 61 | 27 | 9 | 1 |
| October, | 930 | 502 | 428 | 486 | 444 | 253 | 191 | 31 | 25 | 56 | 238 | 61 | 77 | 34 | 10 | 24 | 107 | 94 | 77 | 54 | 66 | 52 | 27 | 7 | 2 |
| November, | 1228 | 638 | 590 | 692 | 536 | 295 | 241 | 39 | 26 | 65 | 260 | 71 | 102 | 47 | 18 | 38 | 133 | 117 | 116 | 97 | 86 | 93 | 35 | 13 | 2 |
| December, | 1044 | 525 | 519 | 540 | 504 | 262 | 242 | 36 | 33 | 69 | 245 | 62 | 100 | 41 | 24 | 32 | 99 | 92 | 85 | 81 | 65 | 74 | 34 | 10 | |
| Total, | 16750 | 8787 | 7963 | 7925 | 8825 | 4703 | 4122 | 489 | 333 | 822 | 4629 | 1339 | 1464 | 644 | 300 | 449 | 1632 | 1491 | 1269 | 1065 | 1027 | 895 | 422 | 114 | 10 |

*Feb.* 15. *Case of Sclerosis of the Feet and Legs, with Complete Anæsthesia, but not attended by any Locomotor Ataxia.*—Dr. Wm. Pepper reported the following case, which presents a very unusual, if not an entirely unique, condition. The patient is a man about 45 years of age; who has always enjoyed general good health, and followed the occupation of an ordinary day-labourer until seven or eight years ago, when, without any special cause, or without any very unusual exposure to cold or damp, although he had always been accustomed to work in the wet and cold, he was seized with an attack of inflammation of the feet, which was called erysipelas by the attending physician. It involved the skin of the feet and of the legs up to about a hand's breadth below the knees. It was attended with redness, swelling, with some heat, and with tingling pain. The heat subsided after a short time, but the swelling persisted, and he noticed soon afterward that the sensation in his feet was becoming impaired. The legs and feet have never returned to their healthy condition, and as the man now presents himself, from about three inches below the tubercle of each tibia throughout the leg and over the entire surface of the feet, the skin is blue; its consistency is greatly increased, its temperature reduced, and the whole member has a hide-bound, indurated character. The nails are brittle, broken, discoloured, and falling off. There is a tendency to ulceration about the joints of the toes, and cutaneous sensibility is absolutely destroyed. To so great an extent is this the case that the man takes pleasure in lighting large pieces of paper and then trampling them out with the soles of his bare feet, and, in doing this, he says that he is not able to feel the slightest sensation of warmth. A galvanic current derived from thirty cells may be passed through the skin of either leg and foot, the positive pole being maintained in contact until the entire derm is destroyed by the caustic action of the current, without arousing the slightest sensation. He can be struck a forcible blow with a cane over the exposed surface of the tibia without his being conscious, except by the shock to his body, of being touched. The toes may be violently trodden upon, and he will not be aware of it. The anæsthesia of the soles of the feet is even more extreme than that of the leg.

This case is sufficiently interesting, it appears to me, in the mere pathological and anatomical point of view. I do not know of any other instance of sclerosis of the legs going on to the entire extinction of sensibility. But the most interesting point in the case is the fact that, despite this entire anæsthesia of the soles of the feet, which is so marked that when the man walks he is entirely unconscious of touching the ground, and, so far as the acquired sensations are concerned, feels as though he were moving through mid-air; he can walk perfectly in the darkest night, or can walk with his eyes tightly closed, without staggering or without any want of co-ordination of muscular motion. In his usual gait he employs a cane, but this is rather because the disease has been followed by some contraction of the hamstring tendons and some crippling of the gastrocnemii and solei muscles, than because he has any need of such support to steady himself.

This case seems to me to have an important bearing upon the physiological question as to the existence of a true muscular sense. In comparing the condition of this man with that of patients suffering from locomotor ataxia due to sclerosis of the posterior columns of the spinal cord, in which disease we usually have more or less complete anæsthesia of the soles of the feet, it is well known that want of co-ordination of muscular motion

is one of the most characteristic symptoms, and that such patients are entirely unable to stand alone or to walk alone with their eyes closed or in the dark. The question has been raised in connection with this disease—progressive locomotor ataxia—whether this want of co-ordination is due to the abolition of an additional special sense, a true muscular sense from which we derive a clear knowledge and perception of the state and force of muscular contractions, or whether it is simply due to an interruption in the regular transmission to the sentient centres of the sensory impressions from the skin. Authorities are much divided on this subject, and many able clinical writers upon this disease incline to the view that it is simply due to a disturbance of the common sensibility of the skin.

In ordinary walking, as is well known, we make use of certain co-ordinated movements which have become habitual to us, and which are employed so as to secure a steady gait, almost or entirely without any conscious or voluntary effort. In these movements, however, no matter how automatic they may have become through long habit, there unquestionably is some assurance conveyed to the nervous centres, though it is not distinctly appreciated, as to the relative state of contraction of the muscles in action, and as to the position of the limbs.

This impression is, as before said, derived either from the ordinary tactile sensations of the cutaneous surface of the legs and feet, and of the deeper tissues or the articular surfaces, or from a special muscular sense which informs us as to the state and force of the contraction of the various muscles. In addition to this impression, moreover, we may derive important aid, in walking, from our eyes, which may be used to watch the movements of our limbs, and guide and direct them in relation to the ground and surrounding objects. When, therefore, there is any disturbance in the power of co-ordinating muscular movements we find that vision is relied upon as a guide in walking. Thus patients with locomotor ataxia are compelled to keep their eyes constantly fixed upon their feet and on surrounding objects, and, if this additional source of equilibrium is withdrawn, by closing their eyes or placing them in a dark place, they fall to the ground unless supported.

In many cases of locomotor ataxia, so called, we find that this is the case even when the sensation in the soles of the feet is by no means completely destroyed. I have seen many cases, and have now several under my care, where the degree of anæsthesia is not very intense, where pin-pricks in the soles of the feet are distinctly felt, where the patient can readily tell the difference between cold and warm water when applied to the feet, where they are able to tell the difference between treading on a soft carpet and treading on a wooden floor, yet the patients are entirely unable to walk so soon as their eyes are closed.

If then the ataxia, or loss of muscular co-ordination, depended upon the cutaneous anæsthesia, and was due to the impairment, or retardation, or irregularity of the transmission of the tactile impressions from the limbs, it would appear probable that in cases of complete anæsthesia of the legs and feet, there should be even greater inco-ordination, and consequent inability to walk, without support, in the dark or with the eyes closed.

In this point of view the case which has just been referred to seems to have an important bearing on the question. In this case we have no disturbance whatever of muscular power, but complete annihilation of cutaneous sensibility, and yet we find that this withdrawal of all the tactile

impressions, conveyed from the soles of the feet, and from the surface of the legs, is not followed by the slightest impairment in the power of muscular co-ordination, but that the patient is able to walk perfectly well without any extraneous aid from his eyes, or from support given to him by others, or without the use of a cane. Upon what, then, must he depend for the knowledge of the regular co-ordinated movements of his legs? We have withdrawn, it seems to me, almost every element in the question, except the single one of the existence of some internal state of consciousness of the contractions of the muscles of the legs. It appears to me that this case is the strongest pathological argument which has yet been advanced in support of the view that there exists a special muscular sense, and, indeed, it seems difficult to conceive of any other explanation which would account for the condition present.

*Postscript*, April 19, 1871.—Since the above report was presented to the College, a marked change in the patient's condition has occurred, so that I am enabled to complete at this time the record of his case.

On December 2, 1870, a small blister was applied to right leg just below the upper limit of the anæsthetic area. This blister drew severely, and, so soon as the skin had healed, was followed by a second and larger one. This blistering was kept up from December 2, to February 25, during which time eight or ten blisters were applied over various parts of the leg from the knee to the ankle. Their sizes varied from 2x4 to 4x6; they were left on for about twelve hours each, and in all cases blistered severely. No sensation was felt while any of them were drawing, until on February 25 the largest blister of all, 6x6, was applied over the antero-lateral aspect of the right leg, just below the knee. There had been two blisters previously over this same spot. This one acted powerfully, a large bulla being formed; the blistered surface was intensely inflamed, the redness extending down the limb, so that the whole leg presented an erysipelatous appearance. After the blister had drawn fully, the patient noticed that there was a slight return of sensibility over the blistered surface. Two days following and apparently in consequence of the constitutional irritation caused by this severe blister, he had a chill, followed by high fever, flushing of the face, anorexia, languor, and debility. The third day, profuse and persistent sweating occurred over the entire surface, including the legs and feet; and he observed a rapid return of tactile sensibility over both legs, so that in the course of twenty-four hours it was restored to its normal degree. The sweating continued profuse for four days, at the end of which time the legs were much softer, the skin especially feeling much more soft and supple. The discoloration of the legs was much diminished. Tactile sensibility of legs and feet perfectly restored, the lightest touches being now perceived; the appreciation of painful impressions as well as of heat and cold was also normal. Tickling the soles of the feet caused marked reflex contractions. The blistered surface was still raw, granulating, and bled freely on slightest touch. When examined a few days ago, April 14, the following note was taken of his condition. The left leg has regained its natural colour and softness, the left foot is still somewhat hard, and when handled imparts feeling of being "hide-bound." Its sensibility is, however, perfect, the colour of the skin good, and considerable mobility of the toes has returned. The right leg is still much discoloured from the repeated blistering, but tactile sensibility is perfect over its surface, and it is much softer than formerly. There was at first but little improvement in his gait, as he suffered from stiffness and pain in the right ankle-joint,

which interfered materially with walking. These are now subsiding under the use of small blisters to the joint, and his gait is rapidly improving.

The recovery in this case was most unexpectedly rapid. The repeated application of blisters to the leg was directed with the view of stimulating the circulation in the derm and subcutaneous tissue, and thus inducing the absorption of the partially organized lymph with which these tissues were infiltrated. I regarded the case as one of sclerosis of the skin in which the proliferation of lymphoid cells had actively advanced, inducing such pressure on the cutaneous nerves as to produce entire anæsthesia of the affected surfaces. The condition of the parts further showed that the stage of contraction due to the gradual development of the newly formed lymphoid elements into fibroid tissue was progressing. The only rational plan of treatment, therefore, appeared to be, to endeavour to powerfully influence and modify the local circulation and nutrition of the parts. It is remarkable, however, that the action of all the former blisters failed to produce any appreciable result, until a very large and severe blister caused a high degree of sympathetic irritation, with fever which was followed by most profuse and long-continued critical sweating. Simultaneously with this violent perturbation of the cutaneous circulation, absorption of the lymphoid material formed in the derm and subcutaneous tissue began, and was attended with the rapid softening of the tissues and liberation of the sensitive nerve-filaments.

The question of the possibility of this patient being a malingerer was carefully considered, and he was critically watched and tested, with the invariable result of confirming the complete anæsthesia of his legs.

*April* 5. *Pyæmia following Pelvic Cellulitis.*—Dr. James H. Hutchinson read the following case illustrative of the similarity of rheumatoid arthritis, gonorrhœal rheumatism, and pyæmia:—

Last year I reported[1] to the College a case of pyæmia, simulating acute articular rheumatism, a manifestation of an altered condition of the blood, which I believe to be more common than is generally supposed. This evening I propose to read the history of a case of disease to which I find it difficult to give a name; presenting as it does many points of resemblance to pyæmia, it nevertheless differs from that disease in its duration, and in the less intensity of many of its prominent symptoms.

The following abstract of the case is derived from notes taken at the bedside: M. D——, æt. 20; admitted July 8, 1870; Irish; single. Has been two years in America, during most of the time living as child-nurse in West Philadelphia. Her health has always been good, and she has menstruated regularly from the age of fifteen up to February, 1870, when in consequence of exposure to cold and wet the menses were arrested in the middle of a period. This was followed by swelling of the hands and feet, by vomiting occurring generally early in the morning, and by chills, giving place in the afternoon to fever, and in the evening to profuse sweating. In addition to these symptoms there were more or less loss of appetite, constipation, distension of the abdomen, and profuse leucorrhœa constantly present. About four weeks before admission her ankles and legs became very much swollen, a condition which was relieved by bandaging. On several of her fingers are the scars of indolent sores. On admission she complained of pain in her back and right groin and thigh, but was not

[1] American Journal of the Medical Sciences, April, 1870, page 398.

confined to her bed. The vomiting had ceased, but constipation and profuse sweats still persisted. She was ordered the syrup of the iodide of iron.

A digital examination showed that the uterus is but slightly movable, that it is jammed down into the excavation of the pelvis, and that there is anteflexion and a detrusion of the whole organ to the left of the median line. The pelvic tissues are thickened, especially on the right and in front, evidently as a result of old pelvic cellulitis.

While she was under the care of my colleague, Dr. John F. Meigs, several collections of pus formed in various parts of her body, as, for example, over the left hip, over the right knee, and over the left scapula; these are said to have been preceded by pain and redness, and when opened to have given exit to a creamy pus. After being evacuated, air was excluded from the cavity, and pressure made over it. She is also said to have had at various times swelling of the larger and some of the smaller joints, not terminating in suppuration. Chills followed by profuse sweating were of almost daily occurrence, and were apparently beyond the power of remedies to prevent. At one time the leucorrhœal discharge was slightly tinged with blood, but menstruation has never taken place since the beginning of her sickness. On the eighth of November the patient passed into my care, and has had since that date several of these so-called abscesses, one over the left scapula, one in the palm of the right hand, and two over back of right wrist. These upon being freely opened gave exit to pus which was not at all creamy, but thin and of poor quality, being ichorous rather than laudable in its character. Instead of closing the abscesses and making compression over them upon the evacuation of their contents, they have been allowed to heal gradually from the bottom. The formation of these collections has not been preceded by pain and redness, but, on the contrary, they would have in most instances escaped notice, were it not for the elevation of the surface which they produce. There has been at various times since she has been under my observation, enlargement of the large joints, evidently from effusion into them, and there is at the present time enlargement from the same cause of the second joints of all the fingers of the left hand and of the middle and ring finger of the right hand; in no case, however, has suppuration occurred, and there is no evidence of disorganization of any of the joints except that of the middle finger of the left hand. On examination a good deal of tenderness still exists in the right iliac region, and in addition to this a sense of fulness is imparted to the hand, but I cannot discover either through the abdominal walls or by the vagina any indication of the presence of a collection of pus in the vicinity of the uterus. It is true, that there is a discharge from the vagina, but this does not differ in any physical characteristic from ordinary leucorrhœa, and there is no reason to believe that it originated in or is kept up by the inflammation of the cellular tissue surrounding the uterus.

In the treatment of the case I have had recourse to antiperiodic doses of quinia; but these, while they have seemed to me to diminish the severity and perhaps the frequency of the chills, have been without further influence on the course of the disease. Having satisfied myself that no great improvement could follow the administration of mere tonic remedies, I determined to give her a medicine possessing antiseptic properties. The sulphites suggested themselves to me, but the large dose in which these must be given to produce their effects seemed ill suited to a case in which gastric irritability has been a more or less constant symptom. Car-

bolic acid possesses antiseptic properties even when administered in small quantity, and it therefore seemed to be indicated in this case. Commencing with a single drop, the dose was gradually increased to four and a half drops three times daily, which was perfectly well borne by the stomach. This remedy was continued until I found I could procure the sulpho-carbolate of soda, which has the advantage over the plain carbolic acid of being much less nauseous and irritating. In doses of five grains four times daily, however, it produced sickness, and I was obliged to return to the use of the acid, which was soon after abandoned for the same reason. Notwithstanding this ill effect of the antiseptics employed, much improvement in her general condition has followed their administration, for while she was taking them—a period of over six weeks—the chills, which had previously been of almost daily occurrence, became much less frequent, the intervals between them being sometimes over two weeks. Only two abscesses have formed since she was placed on their use, and the general appearance of the patient indicates a very much improved condition of health.

It will scarcely be doubted that the case I have reported is one of blood poisoning, undoubtedly depending upon the absorption of some of the products of the inflammation, which probably originally involved the cellular tissue surrounding the uterus, but in the existing condition of knowledge, it is impossible to state the exact nature of the change in the composition of the blood. It has been asserted by some authors that these purulent collections are always preceded by the obliteration of the nutrient artery supplying the part in which they occur. But the occurrence of clots in the arteries in a case like the one we have been considering, in which there is no disease of the heart or arteries, is as difficult of explanation as the formation of purulent collections themselves, and the writers above alluded to have not advanced our knowledge of the true pathology of this and similar cases.

The case has appeared to me to be of interest and also of value, not only because it forms a link in the chain which seems to connect pyæmia with rheumatoid arthritis, and with gonorrhœal rheumatism, and to point out these three as allied affections, allied, it is true, in a way we cannot yet understand, but still bearing the unmistakable evidences of relationship one to another; but, also, because Mr. Matthews Duncan in his recent work on Peri- and Parametritis does not mention purulent absorption among the probable or even possible complications of these diseases. Internal suppurations are now known to give rise frequently to pyæmia, and the fact that such a complication has not been recorded cannot be urged as a reason for rejecting the diagnosis in this case, more especially as the pathology of peri- and parametritis is still in an unsettled condition, and our knowledge of their clinical history can be said to have only just begun.

*April* 19. *Extroversion of the Urinary Bladder.*

Dr. F. F. Maury exhibited to the Fellows of the College two boys, aged respectively eight and nine years, both of whom had been successfully operated upon by him for extroversion of the bladder.

Prior to the operation there was, as usual in such cases, a deficiency of the lower and anterior part of the abdominal wall; so that the mucous surface of the posterior wall of the bladder was exposed and on a level with the surrounding skin. The lower portion of the bladder was par-

tially concealed by the penis, which was short, inclined upwards, and flat upon its upper surface, where it presented a slight median longitudinal groove. The mucous membrane of the bladder was continued along the upper surface of the penis to the glans penis, which was flatter than usual.

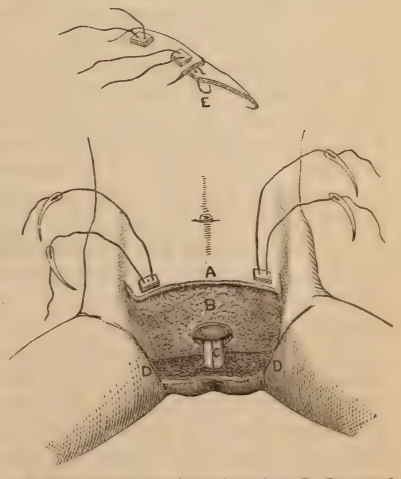
Owing to the usual deficiency of the pubic symphysis in these cases, there was a double scrotal hernia; and on either side in the bottom of the hernial sac could be felt a testicle.

Before the operation the condition of these little sufferers was most melancholy. They could find no rest, neither day nor night, until complete exhaustion granted them a temporary respite. The urine constantly spread itself from the surface of the bladder over the surrounding skin, thereby scalding it and causing constant inflammation. The bladder and penis were incrusted with urinary salts. Every motion of the bowels or the slightest collection of flatus in the portions of bowel contained in the hernial sacs, gave violent pain. One little fellow could procure sleep only on his hands and knees; and the other on his back with the legs and thighs strongly flexed.

Such was their condition when I saw them a year ago, a burden to themselves and a source of constant worriment and distress to their parents and friends.

I did not expect to obtain in either case as good a result as I have the pleasure of showing you to-night; in fact I was much worried lest further deformity or loss of life might follow surgical interference, especially so since surgeons of more years and experience than myself had declined to interfere in the first case upon which I operated.

The operation has the merit of originality, and in brief the following were the steps of my procedure. The object was to cover in the bladder as much as possible, and at the same time to so fashion the flap as to direct downwards and in one direction the flow of urine. With this object in view I commenced a curvilinear incision upon the outer third of Poupart's ligament, and brought it down below the herniæ and scrotum to the middle of the perineum, and thence along the opposite side to a point corresponding to the commencement of my incision. I then carefully dissected this flap up, completely denuding the herniæ of their cutaneous covering. When I had dissected to the root of the penis, I made a valve-like incision in the flap so as to allow the penis to slip through. In this way I obtained one flap that was amply sufficient to cover in the bladder. Then I made an incision transversely across the abdominal walls and dissected up a trap-door flap. I then inverted the lower flap, so as to bring its cutaneous surface in contact with the mucous wall of the bladder. I then bevelled the edges of the lower flap, and by means of the tongue and groove suture of Prof. Pancoast,




A. Trap-door flap above bladder; B. Inverted flap from below; C. Penis and scrotum passing through hole cut in inverted flap; D. Curvilinear incision; E. Form of suture used.

brought it under the trap-door flap and there firmly fastened it. The above diagram gives a view of the suture employed and the mechanism of the operation.

Owing to the giving away of part of the flap in the boy first operated upon, I was twice obliged to review certain parts of the operation. The second boy needed no surgical interference after the primary operation. The parts were dressed with the oxide of zinc ointment softened down with glycerine to the consistency of thick cream. As a result of these operations the boys are here to bear witness that they sleep well, eat well, have no pain, are more comfortable in body and mind, and are immeasurably relieved; and although there is no sphincter action here by which the contents of the bladder can be retained, yet during the recumbent posture the bladder will hold a fair quantity of water without annoyance to the patient. Again, the condition of the parts will permit the wearing of a urinal, which collects the water without difficulty as it flows from the bladder; and the cicatrization of the flaps has cured the herniæ; the testicles being within the abdominal cavity.

I think therefore I may claim these as among the most successful of the operations performed for the relief of this distressing deformity.

In conclusion, I must express my indebtedness to my friend Dr. R. M. Townsend, who has so accurately drawn the diagram illustrating this operation.

*Successful Case of Ovariotomy.*—By Walter F. Atlee, M.D.

The patient, an unmarried woman, 19 years of age, from Trenton, N. J., first came to my notice in May, 1870. Twelve months before that time, she began to enlarge on the right side of the abdomen, and to suffer pain in that situation. She always menstruated regularly. When I first saw her, she was tapped, and the sac, which was monolocular, was entirely emptied, 18 pints of albuminous fluid being removed. She returned to this city in March, 1871, and at that time her abdomen was about as large as it was before the tapping. She was still menstruating regularly. She was admitted to the St. Joseph's Hospital for treatment.

On the second day after her return, a dose of oil was administered to her, and by this means her intestines were well emptied. After this she was only permitted to suck pieces of ice, all kinds of food being forbidden. In the evening 20 drops of elixir of opium were given to her, and the same dose was repeated the next morning, when the operation was performed. The patient was placed under the influence of chloroform; an incision about three inches long was made over the tumour, and the cyst was emptied with a trocar. When sufficiently diminished in size, the cyst was pulled out of the abdominal cavity, and its pedicle tightly fastened in the clamp described by Dr. Washington L. Atlee in the April number of this Journal. The pedicle was then divided, and hare-lip sutures used to close the opening in the walls of the abdomen. The pins were not passed through the peritoneum.

The first forty-eight hours the patient was entirely restricted to the use of ice, then some farina was given to her, and gradually she was allowed to take her ordinary food. The clamp was removed on the 8th of March, four days after the operation, the pins of the sutures on the 9th; on the 11th the patient was allowed to pass water without the use of a catheter; on the 15th an evacuation occurred without the assistance of a cathartic,

and on the 25th, three weeks from the date of the operation, the patient returned to her home.

It is worthy of note that this case was successfully performed in a hospital. It is, at times, exceedingly difficult to have a patient from a distance well cared for in a hotel or boarding-house, or in the house of the kindest relative or friend. Hospitals, where every attention can be had, are objected to in cases requiring severe operations on account of hospital air. It is not believed, however, that such an air necessarily exists in these institutions.

*Operation for Supposed Ovarian Tumour; Removal of Enlarged Uterus.*—By Walter F. Atlee, M.D.

The patient was a married woman, about 52 years of age. Six years ago, just after the battle of the Wilderness, and while menstruating, she received a letter announcing the death of a son. The menstrual discharge ceased at once, and ever since then she had pain on the right side of the pelvis, and eventually became aware of the existence there of a tumour, which gradually increased in size. At the time of the operation this tumour was nearly as large, apparently, when felt through the abdominal walls, as the head of an adult. It was situated rather to the right of the linea alba, and to the touch felt like a cyst, with thick and tightly stretched walls. The neck of the womb was normal in size and position. The uterine probe could not be introduced quite as far as usual into the cavity of the womb. The tumour was felt to be quite firmly attached at its lower part. When the hand was placed over it, and it was tried to move it from side to side, these movements were not felt to be communicated to the uterine neck.

With the belief that this tumour was a cystic one of the right ovary, on the 18th of April the abdomen was opened, most of the adhesions were broken up, and a trocar was introduced into it. No liquid could be extracted. The incision was then enlarged, all the adhesions were destroyed by tearing them with the fingers, and the whole mass, which was found to be a growth from the uterus, was turned out. The clamp was applied around the upper part of the vaginal canal, and the tumour was cut off.

The specimen is here presented. It weighs five pounds. I have examined it only in order to see if the probe would pass into the uterine cavity further than it does into the healthy womb, and it does not. I should be glad to have a thorough examination of it, and the result of the examination reported to the College, for the specimen is certainly a very uncommon one.

The patient operated upon so far is doing well. At the meeting, on the 3d of May, Dr. Atlee made the following statement:—

The pulse the next day was 88, and there was no vomiting.

22*d*. Allowed gruel; before that only pieces of ice; changed her bandage.

23*d*. Removed clamp and sutures, and placed over the front of the abdomen several strips of adhesive plaster; a boiled egg was allowed to-day.

24*th*. A mutton chop was allowed.

25*th*. A full meat diet.

26*th*. She was allowed to pass water herself, and an injection was given to move the bowels.

28*th*. Allowed to sit up.

*May* 2. With the exception of the bare surface of pedicle, she is very well. She has gone from private room to the public ward, from the basement to third story, about eighty feet higher, up the stairway herself, without fatigue.

The specimen was referred to a committee, consisting of Drs. Wm. Pepper, Wm. F. Norris, and John Ashhurst, Jr., which reported as follows :—

The mass was somewhat triangular in shape, with the angles very much rounded. Its circumference transversely around the upper and widest part was 20 inches. The circumference, measured around its vertical diameter, was about 15 inches. The exterior was glistening and fibrous in appearance; on palpation it gave the sensation of a tensely-filled sac. No openings for the entrance of the Fallopian tubes were visible to ordinary ocular inspection.

A small piece of the vagina was found with about one-fourth of the os uteri, the remainder having been severed and left in the grasp of the clamp. The os was reduced to a mere ridge on the mucous membrane of the vagina, the neck being entirely obliterated. No cervical or uterine cavity could be found, the entire lumen being occupied by a mass which presented an irregularly rounded portion entirely filling the distended os.

On section, the tumour was found to be solid throughout, and to consist of a mass which sprang from almost the entire extent of the inner layer of muscular tissue of the uterine wall, and, growing concentrically, had produced entire obliteration of the cavity, and at the same time great and symmetrical enlargement of the uterine mass.

The tumour, in places, strikingly resembled muscular tissue; in other places it was softer and more succulent; two small pseudo-cystic cavities were found, due to softening of its tissue. Microscopic examination showed it to be a *myoma*, consisting of elements homologous with the tissue of the uterus, namely, spindle-shaped cells, imperfectly developed muscular fibre cells, and some curly elastic fibres. The mass was invested by the thickened peritoneal capsule, and by the external layer of muscular tissue of the uterine walls: it could be readily stripped away from these.

It will, therefore, be seen that the tumour is an ordinary uterine myoma, which, by its most unusual mode of growth, has completely obliterated the uterine cavity, and obstructed the cervical canal. The morbid appearances of the tumour fully justify the statement of Dr. Atlee as to the impossibility of introducing a sound to a greater depth than normal.

Dr. R. N. Downs read the following case of *Punctured Fracture of the Skull, penetrating the Brain; Apparent Recovery; Death from Cerebral Suppuration four months subsequently.*

While T. C., æt. 12, was playing with some friends on the afternoon of June 8, 1869, a board, through one end of which a tenpenny nail projected for an inch and a half, fell from a height of two feet, and struck him on the head. The nail entered his skull a little posterior to, and on a line with, the right parietal protuberance, and penetrated the brain to the depth of an inch and a quarter; the board falling to the ground, broke the nail off on a level with the surface of the skull, in which it remained firmly imbedded. The lad walked home, a distance of a quarter of a mile, having called on his way at the office of a physician, who was, however, not at home. I saw the patient about an hour after the accident, and found him sitting quietly in a chair, unconcerned, and suffering from

neither pain, headache, nor other unpleasant symptom. With a pair of strong bone-forceps I succeeded with some difficulty in extracting the nail, which was an inch and five-sixteenths in length. A drop or two of blood followed, and the boy now complained of some soreness at the wound, which was dressed with lint wet with cold water. He was put to bed, perfect quiet enjoined, and f℥iij of the solution of citrate of magnesia ordered to be given every two hours till it operated on the bowels. During the night he slept a little, did not complain of headache, had slight nausea occasionally, and vomited once towards morning; his bowels were moved several times.

Next day, June 9, he was apparently well, except for occasional nausea; there was no pain nor headache; skin cool, and temperature good; had passed urine freely; pulse 85; asked for food. Ordered $\frac{1}{4}$ grain of calomel every two hours; no food but barley-water; ice as freely as he wished; mustard plasters to back of neck and epigastrium; cold water dressing to the wound. In the evening, his pulse was 100, soft and compressible; no febrile excitement; vomiting had occurred several times on awakening out of sleep; ordered gtt. jss doses of tincture of aconite root, to be taken regularly with the mercurial if awake.

*June* 10. Less disposition to nausea, and the tongue was slightly furred.

11*th.* Had been comfortable during the past twenty-four hours; less nausea; no vomiting. Pulse not so frequent, though somewhat wiry and quick; tongue the same as before. The wound was inflamed around the edges; the patient was anxious for more and better food, which, however, was not allowed. Treatment as before, omitting the aconite.

13*th.* No nausea nor vomiting; appetite craving; tongue clean; pulse 80, and of good character; secretions and excretions natural; the wound discharging a few drops of healthy pus; intelligence perfect; sleep natural and without dreams.

About 1½ A.M. the next morning I was called up and informed that the patient was in convulsions, and, on reaching his house, found that he had been in this condition thirty minutes. The convulsions were very severe, active, general, and with scarcely a moment's intermission. Sinapisms were applied to the back and extremities, and leeches to the temples and behind the ears, while an injection of castor oil and turpentine was administered. The fits still continuing, cups were applied to the neck and between the shoulders, the mustard plasters continued, and an assafœtida enema given. At 8 A.M. my friend Dr. Betton met me in consultation, when we agreed to repeat the stimulating injections, and to sprinkle on the patient's tongue $\frac{1}{2}$ gr. doses of calomel every hour, continuing the use of counter-irritants to the spine. At noon I thought the patient dying; the convulsions still continued, though much milder; the pupils were widely dilated, and the eyes strongly convergent; mucous râles throughout the whole chest; slow, gasping respiration; pulse too weak to be counted; countenance suffused, almost purple; the body covered with a cold, clammy sweat; involuntary evacuations, and every appearance of impending death. In about half an hour from this time the convulsions ceased, having lasted twelve hours, with scarcely a minute's intermission between either general convulsions or spasmodic movements, and with no return of consciousness. The respiration now became better, and the skin warmer; the colour improved, and I was again sent for, to find that the patient had evidently passed this crisis, and that all alarming symptoms had disappeared. In the evening Dr. Betton met me again, and,

thinking that there might be a spicula of bone wounding the dura mater (though, from the shape of the nail and force of the blow, this did not seem probable), we determined, should the symptoms warrant it, to trephine the patient in the morning, when we again met, and were joined in consultation by Dr. James Darrach.

We then ascertained that there had been no return of convulsions, that the patient was quite conscious and rational, his pulse and general appearance good, and that all his symptoms contraindicated surgical interference. Calomel and Tyson's antimonial powder, each gr. ½, with gr. v nitrate of potassa, ordered to be taken every two hours—with ten drops of the deodorized tincture of opium to produce sleep and quiet when required. This treatment was continued for a day or two, the patient being at times a little restless, with occasional nausea, but no pain nor headache; the wound discharging a little yellow pus; no fever nor vascular excitement. He continued about in this condition for a week, his only medical treatment being occasional doses of the deodorized tincture of opium, with infusion of senna as a laxative; his diet was restricted to fruit, milk, barley-water, toast, &c.

Two weeks after the injury the patient complained of quite severe paroxysmal pain in the forehead and right temple, which gave him great uneasiness. For this we gave him bromide of potassium, gr. x every two hours, and applied chloroform and aconite to the forehead. The symptoms passed away in a few days, when he entered fairly into convalescence; his appetite became craving; the nausea disappeared; he slept well; there was no cerebral disturbance, and he appeared perfectly well, except for the small opening in the skull, which discharged daily a few drops of pus.

On the 10th of October, when at the house visiting another member of the family, I examined this patient carefully, and found that the wound in the scalp was completely cicatrized, and that everything about him indicated perfect mental and physical health; he had grown to be larger and heavier than before the accident, and his nutrition and apparent health were all that could be desired.

*October* 15 (a week more than four months from date of injury). T. C. awakened from a good night's sleep, with frontal headache and nausea, but in the afternoon he had a cool skin; pulse soft, and about 100; tongue clear, and bowels acting well; he did not *appear* to be seriously ill. The headache and vomiting continued, in spite of treatment, till Monday morning, October 18th, when he quietly and suddenly expired, without coma, convulsions, delirium, or any mental aberration whatever, being until within a minute or two of his death intelligent and rational.

A *post-mortem* examination was made in the presence of Drs. Betton and Lambdin, thirty-three hours after death, the head only being opened. The wound in the scalp had entirely cicatrized, though the cicatrix was not perfectly firm; its circumference was attached to the bone, the opening in which was oval and smooth, from three-sixteenths to one-fourth of an inch in each diameter. The inner table of the skull was no more injured than the outer. Upon removing the calvaria, the dura mater was found to be thickened and adherent to the bone, for a little distance around the opening, though there was no corresponding lesion in the membrane itself.

When the meninges were removed, we found the middle and posterior lobes of the right hemisphere softened to the consistence of thick cream, indeed nearly diffluent; a probe passed in the direction of the nail wound,

entered an abscess at the depth of an inch and a half, which contained four ounces of greenish-yellow pus; there was no appearance of a membranous wall, the sides of the cavity being simply denser brain-structure. Almost the whole of the right hemisphere was so completely disorganized and softened, that it was impossible to trace any anatomical point with certainty; indeed, after emptying the abscess, the right brain was soaked up with sponges, and squeezed out.

The points in this history which seem worthy of special notice are—

1. The sudden onset of, and almost equally rapid recovery from, the terrible succession of convulsions on the sixth day;

2. The subsequent return of the boy to apparent health, without a solitary indication five days before his death that anything was the matter with him; and

3. His gain in weight and size; the regular manner in which his vital functions were conducted, and the total absence of headache, dizziness, or nausea, or of sensory or intellectual disturbance of any kind, while yet his brain was in the condition which has been described.

It is highly probable (though, from the disorganized state of the brain, the examination did not prove it) that the abscess had burst into one of the ventricles, an occurrence which is believed to be invariably and rapidly fatal.

A question of great clinical interest is as to the propriety of trephining in this boy's case; though my friends Drs. Betton and Darrach, as well as myself, were well aware that most surgical authorities advise the use of the trephine in punctured fractures of the skull, yet as we knew the depth to which the nail had penetrated, and that should suppuration take place at the bottom of the wound, as it probably would, we could not safely evacuate the pus, we concluded that it was better not to operate.

Dr. William Pepper recalled the fact that in most of the cases of abscess of the brain on record, it has been found that following the first period of excitement, which may be characterized by fever or convulsions, there is a period of latency of variable duration, but usually continuing for several months, during which scarcely a symptom is present. This is strictly true in those cases in which the abscess has involved only the white substance of the brain, and none of the large ganglia at the base of the brain. So long as the disintegrating process does not involve the base of the brain, this may go on until it reduces the brain to a mere pulp without developing any distinct cerebral symptom, a result which is probably due to the fact that the opposite hemisphere, or that the remaining portion of the cortex on the injured side, is sufficient to supply the process of intellection, while there is no interruption to the transmission of motor impulses through the large ganglia at the base of the brain. But when this period of latency is concluded, it very generally happens that the patient dies from coma or by a sudden death resulting from the overwhelming shock occasioned by the escape of this fluid into the cavity of the ventricles.

Dr. John Ashhurst, Jr. In regard to trephining for abscess of the brain, the great difficulty is that it is almost impossible to say positively what are the symptoms of cerebral suppuration. They resemble so closely those of meningitis, that it is very difficult for the surgeon to decide which condition is present. More than this, if the question of suppuration was settled, it would be almost impossible to tell whether the pus was near the surface or deep-seated. Although the operation has been occasion-

ally successful, it is one which few surgeons would think justifiable, and which in a large majority of cases could certainly but hasten the fatal issue.

Dr. William Pepper. The remarks of Dr. Ashhurst touch upon two of the great difficulties which deter most surgeons from performing the operation. Where doubts exist as to the existence of suppuration and the position of the abscess, of course no prudent surgeon would operate; but there are many cases where the diagnosis can be made with considerable certainty. Where there is a local injury to direct attention to the probable seat of suppuration, and where the symptoms are developed in such a way as to render the diagnosis reasonably certain, it appears to me that the operation of trephining offers more chance of recovery than any other plan of treatment. In examining a number of cases where death has resulted from necrotic disease of the skull, and where pus had accumulated in large quantities between the skull and the dura mater or between the dura mater and the arachnoid, I have been forcibly impressed by the fact that, had the operation of trephining been performed, the evacuation of the abscess could not have failed to be followed by decided relief to the patient.

Dr. Ashhurst. The more I see of such cases, the more hesitation do I feel in making a positive diagnosis as to the actual condition of the brain. Even if we could open an abscess, we frequently could not evacuate the pus, for it would be too thick; and if we did evacuate a portion of the pus, we still could not prevent the abscess from emptying itself into the ventricle. The operation of trephining is in itself one of a very serious nature.

Dr. William Pepper. I do not wish to be understood as advocating the indiscriminate performance of trephining in cases of abscess of the brain. The class of cases in which the operation is recommended is chiefly that in which the abscess is probably superficial, generally where it is connected with disease of the bone which could be localized from the nature of the injury or from the actual existence of necrosis, and where we could reasonably hope to open the abscess without being obliged to enter the brain-substance. In Dr. Downs's case, the operation could not have restored the healthy condition of the brain, but only have afforded temporary relief at best. In other cases, however, the operation would certainly remove the chief part of the trouble; and by keeping the wound open to allow the pus to discharge, I see no reason why there should not be a fair chance for considerable prolongation of life, and even recovery.

*May* 3. *Operation for Supposed Ovarian Tumour.*—Dr. Packard remarked, that he was reminded by Dr. Atlee's case (see number of this Journal for July, 1871, p. 157), of one which occurred to him in 1863, in which, however, the result was less favourable. It was that of an unmarried woman aged 21, the subject of an abdominal tumour, which caused at times acute pain, and which greatly impeded respiration. The swelling had first made its appearance about a year previously, just above the left groin, and presented the usual characters of a multilocular ovarian cyst; it seemed to be free from adhesions. Menstruation was more frequent than normal. The patient was otherwise in good health.

On the 21st of October, Dr. J. C. Morris, who was attending the case, introduced a trocar and canula at the upper part of the tumour in the median line, and drew off about a pint of slightly bloody serum. After

careful consideration, Dr. A. Fricke, Dr. Morris, and myself, decided upon attempting ovariotomy, and did so on the 26th.

Anæsthesia having been induced, and the patient suitably placed on a strong table, I made an incision about four inches in length in the median line. The peritoneum bulged out so as to simulate intestine. Dividing it, I passed my hand in and felt around the tumour, which was very firm, but free anteriorly from adhesions. The incision was now extended upwards about four inches further.

Passing a large trocar into what was taken to be one of the cysts, I endeavoured to empty it, but no fluid escaped. On the withdrawal of the instrument, a copious flow of venous blood ensued, and from the character of the pierced tissue I was satisfied that it was that of the uterine wall. The wound was at once dilated, and the bleeding vessel secured.

It being now evident that the removal of the tumour was impracticable, we only waited for the hemorrhage to cease, and then closed the wound in the uterine wall by two silver-wire sutures. The incision through the abdominal parietes was brought together with harelip sutures and strips of isinglass plaster. Warm flannels were applied, and stimulus given.

For a day or two, morphia was freely given by the mouth, but as it caused nausea, it was discontinued, and opium suppositories employed instead. This symptom was very troublesome for about two weeks, although combated by means of iced drinks, effervescing draught, hydrocyanic acid, &c. Her pulse steadily but gradually rose, and the abdomen became extremely tympanitic; the swelling causing the long ends of the silver sutures, applied to the uterine wound, to disappear into the peritoneal cavity. The external wound did very well, only giving pain when she vomited. Some bloody discharge, supposed to be menstrual, took place from the vagina for several days after the operation. Her main source of suffering was from the embarrassment to her respiration, arising partly from flatulence, to allay which hot poultices were used with some benefit. She grew weaker and weaker, her pulse rising steadily, and her mind wandering at times. Two or three days before her death she rallied a little; began to eat with more appetite, seemed to gain strength, and was quite rational. The improvement was but temporary, and on November 10th she died exhausted.

An *autopsy* was made nine hours after death. Abdomen only examined. The tumour was found free from adhesions, except one or two slight bands going to the intestines. Several large flakes of yellow lymph lay in the peritoneal cavity, but there was no liquid effusion. The wound in the uterus was wholly healed, without any sign of surrounding inflammation. The tumour, which was fibrous and solid, presented a most deceptive fluctuation; it seemed to have been developed from several centres, chiefly, perhaps, from the left ovary; a strong fibrous pedicle connected it with the upper and back part of the uterus. In the centre of one fibrous mass was what seemed to be a shrunken cyst. The whole tumour was judged to weigh thirteen or fourteen pounds, and filled up the cavity of the pelvis almost completely. The uterus was flattened out in front of it.

*May* 17. *Results of Hip-joint Excision.*—Dr. John Ashhurst, Jr., exhibited a patient upon whom he had performed excision of the hip-joint for hip disease, at the Episcopal Hospital, in February, 1867. The early history of the case was fully reported in the second volume of the *Pennsylvania Hospital Reports*, and the patient was now introduced to show

the final result of the operation. The sinuses, of which several existed at the time of the patient's leaving the hospital, were now entirely closed, and the wound had remained firmly healed for several months; the limb was very useful, the patient—now nearly ten years old—walking easily and rapidly, without support or assistance of any kind. The growth of the limb on which the excision had been performed had been very nearly equal to that of its fellow, the amount of shortening being at present not more than a quarter of an inch greater than the length of the portion of bone removed.

In connection with this case, Dr. Ashhurst exhibited also the head and neck of a femur removed by excision from a patient in the Children's Hospital, on account of advanced hip disease. The latter case was still under observation, but the specimen was shown as illustrating very well the change in the form of the bone which accompanies the ultimate stages of coxalgia, the neck of the femur having almost disappeared, and the head being reduced to a mere nodule of bone, by the persistence of caries and of long-continued suppuration. From an inspection of this specimen, it was easy to understand how the external appearances might lead to the supposition that a true dislocation had occurred, while yet dissection would show that the caput femoris, or what remained of it, was actually in the acetabulum.

With regard to the circumstances under which hip-joint excision should be performed, Dr. Ashhurst urged that the operation should be looked upon as a last resort, not to be employed as long as a reasonable prospect remained of saving life in any other way. The statistics of nearly four hundred recorded cases, to which he had references, showed, he thought, the operation to be one of such gravity that it ought not to be undertaken unless when its necessity was very evident, the mortality being in round numbers one-half of all terminated cases, and about one in three dying even at the most favourable age for operative interference. Should, however, excision be determined upon, Dr. Ashhurst urged that the removal of diseased bone should be as thorough as possible, no additional risk being entailed by such a course, while the period of convalescence would be materially shortened.

*Dec.* 20. *On the Diagnosis of Anæmic Murmurs.*—Dr. J. H. Hutchinson read the following paper on this subject:—

Although much has been written upon the subject of anæmia, and upon the means of distinguishing murmurs accompanying it from those produced by cardiac lesions, yet cases occasionally occur in the practice of every physician, in which it is almost if not quite impossible to determine from a single examination whether or not there exists organic disease of the heart. Such a difficulty constantly arises in cases of acute rheumatism, a disease in which there is a decided tendency on the one hand to the occurrence of inflammation of the membranes of the heart, and, on the other, especially if the case have been treated by antiphlogistic remedies, or by large doses of alkalies, to the production of anæmia, which may persist long after the patient is well enough to leave his bed, or even the house, and which may, in consequence of the existence of cardiac murmur, give rise to the impression that permanent injury has been inflicted upon the heart. It, therefore, frequently becomes a matter of some importance to be able to say whether the murmur indicates valvular trouble, or whether it is simply an attendant upon alterations in the

composition of the blood. In spite, too, of all that has been written, the cause of these anæmic murmurs still remains undiscovered. The definition of the anæmic murmur given by Walshe, the general accuracy of whose description will scarcely be impugned, is as follows: "An intracardiac hæmic murmur of this variety is of moderate or very slight intensity, commonly of medium or low pitch, short or moderately prolonged, of whiffing quality, very easily rendered temporarily harsh by excitement of the heart, and *modified in intensity by certain changes in posture.*[1] This murmur is, as far as I have observed, invariably basic in seat and systolic in time, produced at the orifices of the aorta and of the pulmonary artery—with a force at each, proportional to the power of its communicating ventricle; scarcely conducted along the aorta at all, frequently audible, on the contrary, at the second left or pulmonary cartilage; only in exceptional cases audible below the nipple; and never within my experience perceptible as far as the left apex." He also attaches much importance to the fact that cardiac murmurs of this class are generally accompanied by the venous hum. In regard to the mechanism of these murmurs he says this is obscure enough, but that it seems impossible to ignore the influence of the composition of the blood "in highly marked spanæmia;" he says, "neither the flaccidity of the veins, pressure on their surface, nor even velocity of current is required for the generation of murmur." Other writers are disposed to attribute their production to augmented friction of the blood against the orifices of the aorta and pulmonary artery, and others to the diminished tension of the valves and vascular walls, which is caused by anæmia, and which permits vibrations in them to be more readily excited and maintained than in health. All, however, so far as I am aware, with a single exception, are agreed that the seat of their production is the aortic or pulmonary semilunar valve. A paper will be found in the *Archives Générales* for 1866, in which the writer, M. Parrot, attempts to prove that they are really due to tricuspid regurgitation. This regurgitation is caused by an enlargement of the right auriculo-ventricular orifice, consequent upon dilatation of the cavity of the right ventricle. The walls of the right ventricle are thin in comparison with those of the left, and it is thought that when badly nourished, as they must be in anæmia, they oppose but a feeble resistance to the dilating influence of the blood. M. Parrot says that the so-called anæmic murmur is not heard immediately after a large hemorrhage, but sometime later, when the dilatation of the cavity has been produced. He says, moreover, that the seat of the greatest intensity of these murmurs is not, as has been generally supposed, at the pulmonary cartilage, but invariably over the body of the right ventricle, and generally at the level of the fourth rib, a little to the left of the sternum, and that they are constantly accompanied by pulsation of the jugular veins, which may be visible under ordinary circumstances, or may be only perceived when the patient is placed in bed with his head a little lower than his shoulders. It cannot be doubted that a murmur depending upon functional rather than organic disease is occasionally heard in the position above indicated, but there are few physicians accustomed to the careful examination of the heart, who will agree with M Parrot that this is the most frequent seat of anæmic murmurs, or that these are constantly or even often attended by venous pulsation.

[1] The italics are our own.

With the view of bringing to the notice of the profession a sign which I conceive to be of some importance in the diagnosis of anæmia, and which, if not wholly unknown, is at least practically ignored, I have determined to report the following cases, which are a few of those in which it has been observed.

Case I. Annie C., æt. 18, born in Ireland, single, a domestic, admitted into the Pennsylvania Hospital, Nov. 17, 1870. Family history shows a tendency to phthisis. Has lost her mother and one sister of consumption. Her health has generally been very good; when well, is stout and strong and has a good colour. Came to America at the age of 15, and shortly afterwards began to "live out." Has lived in the same place during the past three years. Her work was hard, and she had sufficient though not very attractive food, and as a rule scarcely ever went out. She has never had malarial fever or rheumatism.

Began to menstruate when between 14 and 15 years of age, and the discharge continued at intervals of a month for a short time, but soon afterwards recurred regularly every fortnight, and has since continued to do so, when well. The discharge continued for from two to three days, and was usually abundant, necessitating frequent changes of napkins. Two years ago she became without any apparent (additional) cause, very pale and weak, and her menses ceased entirely for two months. She lost flesh and strength, and was obliged to give up work. Took tincture of chloride of iron, and went into the country. This treatment soon restored her to health, and her menses reappeared. Last July, after unusually close confinement to the house and hard work, she lost appetite, became pale, felt weak, grew thin; had shortness of breath and palpitation on slight exertion, and her menses appeared only once a month, while their duration was a little extended. At this time she had frequent bleeding at the nose. Has never had cough, never hæmoptysis, and never any uncommon loss of blood save by the frequent menstruation. She took tincture of the chloride of iron without apparent benefit. She continued to lose colour until admission.

Two weeks ago began to suffer from severe irregular pains, neuralgic in character, at the base of the chest on both sides anteriorly. Has never had leucorrhœa.

On admission she was markedly anæmic; the hands and face were white, the circulation of the surface sluggish, the lips and tongue pale, and the conjunctiva pearly, tongue clean, appetite poor, and her bowels constipated. She has no gastric or pulmonary symptoms. She sleeps well.

The urine is somewhat increased in quantity, but otherwise normal. Over the base of heart is heard a well-marked anæmic murmur. It is systolic in time, soft in quality, and is not heard at the apex. When the patient is placed in the recumbent posture, this murmur becomes much more intense, and this is evidently not due to increased action of the heart. The murmur becomes less intense when the patient again assumes the erect position. There is no diastolic murmur, and no reason to suspect any organic disease of the heart. At the sides of the neck, between the two insertions of the sterno-cleido mastoid muscle on the right side, is heard a continuous, musical, venous hum.

*Dec.* 23. Patient improved very much, her gums, which were so pale, have now a good colour, the colour has returned to her lips and cheeks; a soft murmur is still heard at the base of the heart.

*Jan.* 1, 1871. Condition still continues to improve, the soft murmur before remarked has never disappeared.

16*th.* Discharged, much relieved.

Case II. John P., æt. 16, born in England; occupation, sailor boy, admitted April 13, 1871. Family healthy; father died of a fever; previous health has always been good, and has been a sailor for about 17 months. Was taken sick on voyage from the West Indies; had fever,(?) general weakness, &c. Soon after his feet swelled, and he became unable to attend to his duties.

13*th.* Present condition anæmic and weak, feet and legs swollen and pit slightly on pressure; appetite good; no symptoms of digestive trouble. A soft systolic murmur is heard at the pulmonary cartilage; by placing the stethoscope over either jugular, the "bruit de diable" can be detected. Urine was examined, but neither casts nor albumen were found. Passes urine in normal quantity; symptoms seem to be dependent upon the anæmia. He was ordered the infusion of scoparium and the citrate of iron and quinia in doses of five grains three times daily, and good diet.

19*th.* Œdema diminished considerably since admission. The infusion of scoparium was only given for a few days. The murmur before noted is heard most distinctly when the patient is in the recumbent posture.

29*th.* Has improved to a certain extent; has lately had an attack of bronchial catarrh which has thrown him back. There is some lingering œdema of the lower extremities, though not nearly so marked as upon admission. Treatment unchanged. Patient was subsequently discharged very much relieved, the murmur having entirely disappeared.

Case III. Annie G., æt. 19, American, domestic, admitted into Pennsylvania Hospital Oct. 12, 1871. Family of patient seems to be healthy. She began to live out four years ago. Her work has generally been light; her food has always been good; she has never had anxiety of any kind; she began to menstruate at 15, and was always perfectly regular until one year and a half ago; she at that time missed one or two periods, and has ever since menstruated very irregularly. Soon after this functional derangement she became, as she expresses it, nervous; had headaches and backaches, and worried about herself. She gradually lost colour. The pallor of her skin progressed steadily, but her strength held out tolerably well until a few weeks before her admission to the hospital.

Condition on admission. Exceedingly anæmic; skin presents almost a waxy appearance; mucous membrane of lips and mouth white; appetite poor; bowels regular. Suffers from palpitation of the heart on exertion, a very faint hæmic murmur is heard at pulmonary cartilage; this is rendered considerably more distinct when patient is placed in the recumbent posture. Ordered the best diet that the hospital affords, and a teaspoonful of the following mixture: Liq. potass. arsenit. f℥ij; tr. nucis vomicæ f℥ss; vini ferri amari f℥viiss; to be taken three times daily.

*Nov.* 6. Her face has gained some little colour; is somewhat stronger, but improvement on the whole has been slow. A faint venous hum is heard over the jugular veins, but it is only heard when slight pressure is made with the stethoscope. The cardiac murmur is heard not merely at the pulmonary cartilage, but when the patient is lying down it is heard over the body of the heart and along the left edge of the sternum as far down as the ensiform cartilage.

In all these cases it will be noticed that the murmur became more intense upon the patient's assuming a recumbent position; in one case,

indeed, it was occasionally only to be heard in this position, and in this case the venous hum was to be heard only when pressure was made with stethoscope over the course of the jugular vein, and the head of the patient was turned strongly to one side, so as to put the muscles of the other side on the stretch. I am, in consequence, inclined to believe, that, in many cases in which the anæmia is not marked, and in which no murmur can be heard when the patient is standing, it may sometimes be perceived by causing the patient to change his position. It will be recollected that in the passage quoted from Walshe's work on *Diseases of the Heart*, he calls attention to the fact that the anæmic murmur is modified in intensity by certain changes of position, but the context justifies the inference that these changes are of a nature to cause some excitement of the heart's action; whereas, in the cases reported by me, the change from the erect to the recumbent posture did not cause increased frequency of the pulse, which was, of course, noted carefully before and after having recourse to auscultation. The patients were also re-examined when they had risen from the bed, and in all these cases the murmur was then found to be less intense than it had been the moment before.

In a search through all the works on physical diagnosis which are at present accessible to me, I find but a single reference to this important point in the diagnosis of anæmia. And this is by an author whose book is indeed a standard one, but is also not as much read as it deserves to be. I allude to Dr. Stokes, of Dublin. When speaking of the murmur occasionally heard during the convalescence from maculated typhus, he mentions, as one of its characteristics, its frequent disappearance or diminution in the erect position, and says: "This may help us in distinguishing it from an organic murmur, but I am unable to say whether the same is not observable in ordinary cases of anæmia."

I am at a loss to explain the cause of the increased intensity of the murmur in the recumbent position. It is possible that the relation of the heart to the large arteries at its base is of such a nature that increased friction of the blood against the sides of the arterial orifices takes place in this position, or it may be, that, the respiration being less free and more embarrassed in this than in the erect position, the circulation through the pulmonary vessels is interfered with, and, as a consequence, that a murmur may be produced at the pulmonary cartilage; or, admitting M. Parrot's theory to be correct, that this interference with the pulmonary circulation favours the occurrence of tricuspid regurgitation.

1872. *Jan.* 17. *Encysted Tumour of the Neck.*—Dr. Walter F. Atlee reported a case of this form of tumour occupying the submaxillary region on the left side.

The patient was a young man aged 25 years. The tumour was about the size of a goose-egg, and had existed for several years. For more than a year attempts had been made to effect a cure by means of a seton, injections of iodine, and by repeated tappings. Extirpation, which had been delayed on account of its extreme difficulties and dangers, was finally resorted to, and the patient recovered.

The chief interest in this case is derived from the fact that it appears to show that encysted tumours of the neck may have their origin in certain changes taking place in the lymphatic gangliæ, as suggested by M. A. Richard (*Memoirs de la Societé de Chirurgie*, t. iii.). Another reason for calling attention to the case is the fact that English surgical literature is

most remarkably barren on the whole subject of tumours of the neck. In this respect Holmes's *System of Surgery* is quite deficient.

*Feb.* 7. *Report on Meteorology and Epidemics.*—Dr. Wm. L. Wells read the following report on meteorology and epidemics for 1871:—

From the meteorological record kept at the Pennsylvania Hospital, it appears that the most remarkable circumstance connected with the temperature of the past year was the extreme warmth of both March and April, a warmth unparalleled since the records have been begun in this city. The maximum temperature was on the 17th of March, when it reached 73°, and the minimum on the 29th when it fell to 34°. The maximum temperature of April was on the 9th when it reached 85°, and the minimum on the 2d when it fell to 38°.

The mean temperature of March was 48°.70 Fahr., or more than 7° above the average, and half a degree above March, 1859, the warmest previously known.

The mean temperature of April was 58°.15, Fahr., about $6\frac{1}{2}$° above the average, and more than a degree and a half above April, 1844, the warmest previously known. Fortunately May also was warmer than usual, so that no injury was done to vegetation by frost.

The heat of the summer months, particularly that of August, was above the average, but it was far below that of last year, and consequently we find only 11 deaths from sunstroke, instead of 52 as in the year before, and a diminution of 173 in the deaths from cholera infantum.

The temperature of the last two months of the year was decidedly below the average: that of December being even lower than the average mean of January, and nearly 4° below the average mean of December for the last forty-seven years.

The statistics which follow have been furnished me by the kindness of Geo. E. Chambers, Esq., Registration Clerk of the Board of Health.

The total number of interments in Philadelphia in 1871 was 16,993, a number exceeded only by the years 1864 and '65, when there were respectively 17,582 and 17,169 deaths, the great number then being caused chiefly by the deaths among soldiers, which amounted in the first year to 1598, and in the second to 778. The increase of 1871 over 1870 was 243, or 1.45 per cent. Deducting those who died elsewhere, and were counted because buried in Philadelphia (633 in number) we have 16,360 deaths, which makes (as the population of the city is 675,000), one death in 41.26, or 2.42 per cent.

Of the deaths recorded there were 8942 males and 8051 females, showing an excess of 891 males, or 11.06 per cent. The deaths of persons over 20 were 8251. Under 20 they amounted to 8742, or, deducting 875 stillborn, 7867. The preponderance of deaths among males was observed both in adults and in children, although a little greater in children, on account of the very great excess of stillborn males. Excluding the stillborn, the proportions of both sexes are about equal in the deaths of both adults and children.

The average of deaths for each quarter of the year is 4593; for each month 1431; for each day 46. The fourth quarter, which shows the highest mortality, had 44 per cent. deaths more than the second quarter, which had the least mortality. This is almost the reverse of the preceding year, when the fourth quarter, instead of having the greatest, had the least mortality, and the highest mortality was in the third quarter.

The mortality at the Blockley Hospital, connected with the Almshouse, was 401. That of the coloured population of the city, 957.

The epidemic diseases which in 1870 caused the greatest mortality either entirely disappeared, or very greatly diminished in the year just past. Thus scarlet fever showed a diminution of nearly 700, falling from 956 to 262. Relapsing fever nearly entirely disappeared, as only 7 died of it, instead of 162, which was the mortality of 1870. Of these, 3 were in January, being the last remaining of the epidemic of the preceding year. Yellow fever, which caused so much alarm in 1870, although the mortality was only 13, disappeared entirely in 1871, no cases originating in the city. These are only the most marked instances of what occurred also in all the other zymotic diseases, with one terrible exception. There were 100 fewer deaths from enteric fever, 52 less from croup, 27 less from diphtheria, 24 less from pertussis, 20 less from typhus, spotted fever, &c., 5 less from rubeola, 3 less from cholera, and 1 less from malarial fever, puerperal fever, and erysipelas, respectively.

The year in which these different diseases caused the maximum mortality was 1861 for scarlet fever and diphtheria, when 1190 died of the former, more than five times the mortality of last year, and 489 died of the latter, more than three times the mortality of last year; 1864 for typhus and malarial fevers, when 818 died of the former, nearly ten times the mortality of last year, and 145 died of the latter, or nearly three times that of last year; 1865 for enteric fever, when 773 died of it, two and a half times the mortality of last year; and 1866 for rubeola and cholera, when 221 died of the former, or more than five times the deaths of 1871, and 910 of the latter, instead of 4 deaths from cholera in 1871.

The diminished mortality from these diseases alone, as compared with the preceding year, was 1104. There was also a diminution of 123 in the deaths from diseases of the digestive system, and a diminution of 215 in the deaths from diseases of the nervous system; 34 less from old age, and 205 less from debility, over one year.

On the other hand, there was an increase of 67 in deaths from diseases of the circulatory system, and an increase of 35 in those from diseases of the respiratory system; there were 152 more deaths from congenital debility and malformation, and 53 more stillborn. The chief cause, however, of the total increase of 243 in the mortality was smallpox, which has been raging so fearfully in the past few months, causing in all 1879 deaths in 1871. This terrible disease has been very fatal, not only in this country, but in the British Islands, and on the continent of Europe, during the past year. In England the mortality in 1870 from smallpox was 1259, in 1871 it rose to 13,174, and in London alone 7876. In all England the proportion of deaths was 18 to 10,000 population, in London 24 to 10,000. (In Philadelphia 27 to 10,000.) In London the epidemic began in the end of 1870 and gradually increased until the beginning of May, after which it decreased, showing, however, a slight tendency to increase again in the last few weeks of the year. The mortality in the first quarter was 2400, in the second 3241, in the third 1255, and in the fourth 980. As it decreased in England it began on this side of the Atlantic. In Philadelphia it did not begin until the end of July. There were but 8 deaths from it in the first six months of the year, and in June, the last of these months, there were no deaths. In July there were 5 deaths, in August 16, in September 18, in October 331, in November 640, and in December 861, thus showing that even after the disease had

fairly obtained a foothold, more than two months passed by before the mortality became suddenly alarming.

The manner in which the disease skipped about the city at first was remarkable. It began in the neighbourhood of 16th and Sansom, in August, passing in the same month to 17th and Pine. Of the 16 deaths in that month, 7 were in the 8th ward, where both these localities are situated. It is singular that in the following month, September, only 2 cases were reported in this ward, but a number more than a mile away, near 10th and Master, and 8th and Columbia Avenue, in the 20th ward, where not only no death but no case of the disease had occurred in the month preceding. In October it increased to an alarming extent in that ward, causing 89 deaths there, attacked the western part of Race Street, where also it was pretty severe, and established itself in all parts of the city, save only in Manayunk and its neighbourhood. In November its severity diminished one-fourth in the 20th ward, but doubled or nearly so everywhere else, and then for the first time it became really severe in the southern part of the city, where the most crowded streets and degraded and filthy population are found. In this month 6 cases were reported as originating in the 21st ward.

In December the disease was still more severe and still more uniformly diffused; diminishing considerably in violence only in the 20th ward, which it had attacked so overwhelmingly in October, and where it had already begun to diminish in November.

It is worthy of notice that the neighbourhood less attacked than any other and last attacked was the northwestern part of the city, Manayunk, and its neighbourhood, from which the prevailing winds blow in the cold weather, while the district earliest attacked, and most severely, was that part of the closely built up portions of the city nearest to this very healthy district.

In November and December the 3d and 4th wards were most severely attacked, while Germantown and West Philadelphia were, next to Manayunk, the most nearly exempt portions of the city.

The deaths among the coloured population were about in the same proportion as those among the whites.

As regards the age of those attacked, the young were especially liable to it. 836, or nearly half the whole number of deaths, were of persons under 10 years of age; 607, or nearly one-third, of persons under 5; 316, or about one-sixth, under 2 years; and 203, or nearly one-ninth of the whole number, were of infants under 1 year.

Between the ages of 10 and 20 only 323 died, being nearly 100 less than half the mortality in the preceding ten years. Between 20 and 30 there was an increase to 397, or nearly half the mortality in those under 10, and a little more than one-fifth of the total mortality. After 30 the risk of death rapidly decreased, the number of deaths in each succeeding period of ten years being, on the average, a little less than half that in the one before it, until we come to the period between 60 and 70, when there were 24 deaths, followed by only 7 in the next ten years, and 2 between 80 and 90, after which there were no deaths. This rapid diminution is of course far greater than can be accounted for by the smaller number of persons at a more advanced age.

A remarkable feature of this epidemic was the number of persons attacked who had had smallpox already, some even two or three times.

As regards the protection afforded by vaccination and revaccination, the

statistics of the Board of Health are incomplete, but I have received the following particulars from W. M. Welch, M.D., physician in charge of the Municipal Hospital. In that institution there were treated in all in 1871, 1189 cases, of which 382, or nearly one-third, proved fatal,[1] 32 per cent. Of these, 390 had never been vaccinated, of whom 254 died, or 65.1 per cent. 331 had been vaccinated in infancy, and had a good mark, of whom 33 died, or 9.9 per cent.; 166 vaccinated in infancy—fair mark, of whom 27 died, or 16.2 per cent.; 302 vaccinated in infancy—poor mark, of whom 68 died, or 22 5 per cent. As regards revaccinated cases Dr. Welch furnishes no statistics, but says only that "smallpox after successful revaccination is in his experience exceedingly rare." As a large number of cases of variolous disease after revaccination have undoubtedly occurred in the city, this experience of Dr. Welch confirms the experience of others that such cases are generally very light, so much so as hardly ever to be taken to the hospital.

The only epidemic of smallpox which has equalled the present in severity since 1807 (when the records of the Board of Health begin), was in 1824, when there were 330 deaths, which, in proportion to the population of 135,000 or 140,000 at that time, gives about the same relative mortality as in the past year. No other epidemic has, in any one year, caused more than half the relative mortality of these two years.

The present epidemic was preceded by a period of remarkable exemption from the disease, during which, we may suppose, persons would become careless and neglectful of vaccination until smallpox, ever watchful of any such opportunity, would cruelly punish them for their thoughtlessness. A like period of exemption is to be found before the epidemic of 1824 (which began in the preceding year), as from 1820 to 1822, both inclusive, there was no death from the disease, and there was another period of exemption before the epidemic of 1861.

[1] Some of these deaths occurred in 1872, the cases having been admitted to the hospital in 1871.

## OBITUARY OF EDWARD RHOADS, M.D.

By William Pepper, M.D.

It is a pleasing custom of this College which provides that whenever death has removed one of its Fellows, an evening sacred to his memory should be set apart, on which we strive feebly, as by the power of words and thoughts we may, to recall him, and place him once more in our midst.

The wheels of human life and action revolve ceaselessly, and place a rapidly increasing distance between us and any past event. Each day's cares and activity throng the mind, and dim the images of the past that memory seeks to cherish, until the joy or sorrow that for the time filled the whole of life, seems in but a few months only the shadowy phantom of some far-distant experience.

It is true, that in a life so full and overfull of thought and action as that of the present day, there is but little leisure left to devote to the contemplation of the future, and far less to spend in reflection on the past. Whatever the past has made us, we are; whatever it has given to us, we hold and strive to make the means of securing more and more; but of what it has taken from us, we rarely think, but turn impatiently from the sorrowful reminiscences which sometimes stir in the depths of our being, muttering, "Let the dead Past bury its dead." To a great extent this is needful, if we are to advance in our work actively and hopefully. But do we not often carry this too far, and in struggling manfully against the depression and despondency which follow a great grief, often end in not only throwing off these, but also in forgetting and losing much of the sweetness and usefulness which might always remain with us?

I have chosen this particular evening for the presentation of this brief memoir, since it is within a few days of the first anniversary of the death of him who is its subject.

Edward Rhoads was born in Philadelphia, on the 29th of September, 1841. There is but little to be recorded of his early years, which were passed at his parents' home. He displayed, however, even during his boyhood and youth, many of the characteristics which subsequently distinguished him. His disposition was impulsive and resolute, yet tender, affectionate, and remarkably sympathizing. His fondness for natural objects was strong, and the natural sciences were the favorite subjects of his early studies. His education was conducted at his parents' home until the winter of 1853, when he entered the school of the Brothers Smiley, in order to prepare for his collegiate course at Haverford, where he was admitted in 1855. He pursued his studies here with great success, and graduated with the first honors, in 1859, at the early age of eighteen.

Passionately fond of nature, and gifted with a keen power of observation and a most retentive memory, he acquired a considerable knowledge of several branches of physical science, especially of botany. His love of literary pursuits was strong, and he applied himself with pleasure and easy success to the study of languages and belles-lettres. The range of his reading was really extensive, but the unusual strength of his memory and the happy gift which he possessed of arranging and utilizing his information, always gave a strong impression of the extent and variety of his literary acquirements. His literary taste was singularly pure and ele-

vated—he rarely indulged himself in the reading of fiction, but found his favorite authors among the great poets or writers upon moral or metaphysical subjects. I have had the opportunity of reading a number of the essays which he wrote at Haverford College. They were, without exception, upon subjects of grave and serious character, and his mode of treating them showed an appreciation of their scope and importance, and a depth of thought very unusual at such an early age. One of the most marked features of them is the strong expressions they contain of admiration for, and sympathy with, heroes of a lofty type; and in many instances the characters of such men as Daniel, Paul, Cato, Cæsar, etc., have been chosen as the theme. Among the most elaborate and thoughtful of these early productions of his pen, were essays on "The Trial and Condemnation of Socrates" (which gained the Alumni Prize), and "The Office of the Greek Drama," which formed the subject of his Oration at the Senior Commencement.

The grave tone of his mind was, however, wholly untinged with gloom. He possessed as keen an appreciation of genuine humor as any one I have ever known, and his laugh was ready, hearty, and most infectious. This taste never was lost, and in later years, when serious thought and the continued sight of suffering became oppressive, he would seek relief in some of the humorous works of Holmes or Lowell, both of whom were great favorites with him.

The traits of character which throughout life distinguished him also developed themselves at a very early age. I quote from a letter of one of his favorite teachers at College, who, after speaking of the general success with which he pursued his studies, adds: "What was most striking in him, however, was the maturity and even balance of his mind, his clearness of intellect, and his soundness of judgment. Add to these a dignity and stability of *character* which almost amounted to a special gift or talent by itself." His disposition was frank and open; his impulses were quick and generous, and his affections strong, tender, and deep. These qualities early endeared him to a wide circle of friends, and I much doubt whether even one of them was ever parted from him, so singular was the truth and constancy of his own affections, and so uniform the thoughtfulness and consideration which marked his personal relations with others, while the power of his attractions and the beauty of his character deepened the love and increased the esteem of his friends the longer and more intimately they knew him.

I should indeed do violence to my own feelings (and, I think I may also say, to the feelings of many who will read this sketch), if I restrained or weakened my language in alluding to his character as a friend. What words indeed can fully describe the charm, the sweetness, and the strength of true friendship? the most nearly divine feeling our hearts entertain—the sweetest, surest solace in life—the strong cord which knits men together closer than brethren. It were difficult to realize more fully the perfect form of such friendship than was to be found in the relation between Edward Rhoads and some few of his chosen associates. Few can have inspired more deep and lasting affection than they gave him; none can ever have repaid it with a more rich return.

It will easily be comprehended that such qualities would secure a high degree of control over his companions—and, in fact, I have heard several of his school-fellows and college-mates recall, after a lapse of many years, the powerful influence which he exerted. It was not merely the warm

affection he inspired, the purity and elevated tone of his own character, and the consistency of his conduct, which produced this effect; it was in large amount due to his fearless and unhesitating championship of truth and right, and denunciation of all that was false or wicked. No false sense of shame or fear of ridicule would prevent him from avowing his own adhesion to the right, and encouraging others in the same course. Yet, in his intercourse with his friends, he was ever careful to avoid the slightest expression that could have been construed as unfavorable criticism of their character or actions. Always severe in his judgment of himself, and disposed with true humility to depreciate his own merits or attainments, he was as constantly lenient towards others, and willing to praise them cordially and sincerely. The silent influence of such a character is of untold and incalculable force, and it diffuses around it an atmosphere of purity which is fatal to evil and corruption. I have spoken of the great purity of his character and mind, and this quality was presented to a singular degree by his language, which was not only free from the grosser blemishes, and the use of exaggerated and extravagant expressions, but was characterized by great simplicity and clearness of diction.

Undoubtedly his early maturity of mind and gravity of character were further developed by the results of a severe attack of articular rheumatism from which he suffered while at college. He recovered from this illness after a desperate struggle, but unfortunately it had been complicated with endocarditis, and there remained a considerable degree of mitral disease. It is possible that, had he been persuaded to enter upon some occupation involving little excitement or physical exertion, his life might have been longer preserved. But such a course was entirely hostile to his nature. Gifted with high ability, he felt himself called upon to exert it to the utmost in the cause of humanity, and therefore selected as the occupation of his life, to which he deliberately determined to consecrate his every power, that profession, "than which," as he himself said, "there is but one higher and holier." He was certainly rarely adapted for this pursuit, and he instantly threw himself into its study with the utmost enthusiasm. In fact, even in the early days of his professional life, it was evident that no consideration of his personal comfort, or even of the care and moderation enjoined upon him by the condition of his health, was ever to deter him from the accomplishment of his professional duties in the most thorough and successful manner. He matriculated at the University of Pennsylvania in the autumn of 1860, and graduated with eminent distinction in March, 1863. Immediately after graduation he gained, by competitive examination, the position of Resident Physician in the Philadelphia Hospital, and on leaving there, in April, 1864, was elected to the corresponding post in the Pennsylvania Hospital, where he passed eighteen months. During this prolonged term of Hospital residence, his assiduous devotion to the care of his patients was no less remarkable than his earnest investigation of pathology. The deep impression made by his unremitting attentions upon the sick under his charge, may be inferred from a little incident that occurred after his death. A poor young woman who had undergone amputation of the thigh in the hospital, and had been in his ward, came to the house where his remains were robed for burial, begging with sobs to be allowed to look once more on him who had been so kind to her in her affliction, and had watched night after night by her bedside.

While holding these positions he won, as might be expected from what has been said, a high reputation for zeal and ability, and made many friends among the older members of the profession, all of whom remained warmly interested in him during the rest of his life. A short time before the expiration of his term of service at the Pennsylvania Hospital, he was again attacked with articular rheumatism, and was desperately ill for many weeks. He convalesced slowly, and so soon as his strength permitted, went abroad in November, 1865. He spent about eight months travelling in Great Britain and on the continent, though most of his time was passed in England, where he was welcomed by the numerous friends of his father to that charming circle of English home-life into which strangers so rarely penetrate.

His letters written at this time are striking evidences of the deep and comprehensive interest which he felt in the great social and political questions of the day, and they also show forcibly the powerful impression made upon his mind by the innumerable relics of a past fraught with such historic interest for every American. He naturally felt a lively pleasure as a devoted and sincere member of the Society of Friends, in visiting the birthplace of that religious body, and in studying its vigorous growth and present prosperous condition; and yet his truly catholic spirit reveals itself by the impartial tone in which he frequently alludes to the beautiful ritual of the English Church, and to the eloquence and wisdom of her eminent divines. He also availed himself of the opportunities afforded in London of following the teaching of some of the most distinguished British physicians, and of studying the modes of construction and arrangement of their public charitable institutions. He returned to Philadelphia very much improved in health, though still showing unmistakable evidences of serious organic disease of the heart. His own medical knowledge, and the accurate opinions which had been expressed, at his own urgent solicitation, by several eminent diagnosticians whom he had consulted, convinced him of his true condition, and warned him of the probable results of a life of unceasing activity and excitement. He was not of a nature which could tolerate self-deception, or veil by any specious arguments, based only on hopes and fears, the probable consequences of any course of action. He knew also full well that the sole chance, though even this was but a slim one, of prolonging his life, lay in the choice of some quiet, inactive pursuit. Yet he never hesitated for a moment, but having chosen his calling, and consecrated all his powers to it, he immediately resumed the pursuit of his profession with the utmost devotion and energy. He soon began to receive gratifying marks of the confidence with which his ability and character were regarded. In the summer of 1866, he was elected, almost without solicitation on his part, one of the visiting physicians to the Philadelphia Hospital. He entered upon the duties of this position with the utmost zeal and enthusiasm, and throughout his connection with the hospital devoted a large amount of time, and a larger amount of exertion than he could well afford, to the care of his patients and to the various measures undertaken for the improvement of the organization of the institution. Among other reforms which were introduced during the time of his connection with the hospital, the most important, and the one in which he took the deepest interest and the most active part, was in reference to a change in the mode of attendance on the part of the visiting staff, so as to secure constant service from each member of it. This plan of hospital service, although im-

posing additional labor upon the visiting staff, is so manifestly desirable, both for the interests of the patient and for the purposes of thorough scientific study, as to immediately commend itself, and it is, as is well known, almost universally adopted in hospitals abroad. In America, however, the Philadelphia Hospital has the credit of being the first to institute it and put it into successful operation; and among those who were active in bringing about this admirable reform no one was more influential than Dr. Rhoads.

He also took part in the clinical teaching of the hospital, and delivered weekly lectures during six months of each year; while, at the same time, he formed private classes for more thorough clinical instruction in the wards. His kindness and attention to the patients were extreme, and he was to many of the unfortunates who crowd the wards of that great hospital, not only a skilful physician, but a kind and sympathetic friend. His fondness for hospital work and the original investigations which can only be carried on in connection with such institutions, made him attach the deepest importance to his position on the staff of the Philadelphia Hospital. He retained this appointment until a few weeks before his death, when, becoming convinced of the impossibility of ever re-entering upon duty in its wards, he tendered his resignation. Before it became apparent that this step would be necessary, the interest and enthusiasm with which he had looked forward to a life devoted to investigating and teaching medical science, revealed themselves frequently and strongly in his conversation.

Gifted with unusually accurate and keen powers of observation, Dr. Rhoads was led to devote special attention to the study of Physical Diagnosis, designing to devote himself more particularly to the treatment of diseases of the chest, and in the spring of 1870 he was chosen by the Faculty of the University of Pennsylvania to fill the newly-created position of Lecturer on Physical Diagnosis. He prepared an extended course of Lectures upon this subject, but his rapidly increasing infirmity prevented him from delivering more than a small portion of them. The manuscript notes of his lectures which he left, show in what a comprehensive and thorough manner he had proposed to treat this important branch of medical science. He possessed qualities which eminently fitted him for success as a teacher both of didactic and clinical medicine. His diction was fluent and clear, his choice of language elegant and exact, and his manner in speaking earnest and impressive, though at times it lacked vivacity and variety. His evident sincerity and perfect truthfulness made his statements carry great weight, and aided the happy charm which he possessed of awakening in his audience an enthusiasm for truth and knowledge. I have never known any one whose love for exact truth in all matters exceeded his; and this naturally directed his thoughts strongly to the study of physical science, and to the experimental investigation of pathological questions. I allude prominently to this trait of his mind, not so much on account of any noteworthy results of his own work in that direction, as because it has come to be so generally believed that devotion to the study of the natural sciences, a high degree of confidence in the conclusions drawn from them, and a large faith in the solution of many now-baffling problems through their aid, are, if not actually incompatible, at least very rarely associated, with strong personal religion, deep reverence, and faith.

But here at least were found these two faiths coexistent, yet not in

conflict. He had an ardent love for scientific investigation and a firm belief in the ultimate supreme development and acquisition of scientific truth, and yet never for an instant hesitated to accept the well-established facts of physical science, lest they might be found to conflict with the authority of Scripture. A profound belief in the absolute supremacy of Divine Truth underlaid his whole nature, and he, therefore, felt that the highest attainment of human knowledge would be only a less and less imperfect expression of the Divine Idea, and that eventually all discoveries of science will be found to harmonize with and to be subordinate to God's eternal laws. It would have been a happy thing for the world, if those who have occupied the position of defenders of religious truth had all possessed this spirit of wise toleration. There would not have been presented, what has too often been seen, and is even now far from being extinguished, that artificial and fictitious antagonism between the teachers of revealed religion and those of science, which has driven one party to doggedly support indefensible positions, and has often irritated the other into accepting the imputation of a hostility which has no real existence.

For several years before his death his private practice increased rapidly, and his public positions began to bring him forward, also, as a consultant. His rapid success and the strong attachments which his patients formed for him were the result not only of his clear judgment and practical skill, but as well of the constant, unwearying attention and tender thoughtfulness which he devoted to them. His entire self-forgetfulness and self-sacrifice showed themselves most forcibly in his relations with his patients, and although many times his own infirmities called loudly for care and repose, the call was unheeded, and he was ever glad "to spend himself and be spent" in relieving the sufferings of others.

He was elected a member of many of the learned and medical societies in this city, among which may be mentioned the Pathological Society (December, 1864), the College of Physicians (January, 1867), the American Philosophical Society (April, 1868), and the Academy of Natural Sciences (May, 1868). He participated actively in the proceedings of these bodies, and was a frequent contributor to the two medical societies. He also held office in these latter, being Recording Secretary of the College of Physicians, and Treasurer of the Pathological Society. It will readily be understood that with the numerous and onerous duties devolving upon him in connection with his practice and the public positions which he held, there was but little time to devote to literary labor. In addition, however, to the short papers furnished to the proceedings of the College of Physicians, and the Pathological Society, he aided Dr. J. Forsyth Meigs in the preparation of an elaborate memoir on "The Morphological Changes of the Blood in Malarial Fever," which was published in the *Pennsylvania Hospital Reports*, vol. i., 1868. He also published (id. op.), in conjunction with the writer of this memoir, the results of an experimental investigation into the Fluorescence of the tissues of the body, considered especially in connection with malarial diseases and the action of quinia. He also wrote many able reviews, which appeared in the *American Journal of the Medical Sciences*. His deep interest in religious subjects, as well as in all important social questions, was evinced by the preparation of a number of memoirs or addresses on such topics, which display much thoughtful study and a wide comprehensive grasp of mind. None of these articles have been published.

His style as a writer was clear, concise, and elegant; his diction was

remarkably pure and displayed great familiarity with the structure and resources of the language. It is to be regretted that he left behind him no original work at all worthy of his powers as an observer and author. That he contemplated the preparation of extensive clinical treatises, is evident from the valuable records which he left of observations made at the Philadelphia Hospital.

But one other literary performance, or rather engagement, calls for mention. When, in the spring of 1870, it was determined to establish a semi-monthly medical journal in Philadelphia, Dr. Rhoads was unanimously requested to assume its editorial management. After much hesitation he accepted the position, with a determination to devote himself to the development of a journal which should aid in elevating the tone of medical literature, and should be a consistent and fearless supporter of the true interests of medical education and medical science. He was, however, only enabled to make the preliminary arrangements for the publication of *The Philadelphia Medical Times*, when his rapidly failing health compelled him to relinquish into other hands the management of an enterprise which he could himself have conducted with consummate judgment and skill. His place has fortunately been most successfully filled by the present accomplished and talented editor; but the extent of the loss which the journal, while still in embryo, sustained from the death of Dr. Rhoads, can be fully appreciated only by those who were intimately acquainted with the rare excellence of the qualities which he possessed for editorial labors.

This was the latest professional work which he was destined to undertake. The organic disease of the heart from which he had suffered for nearly ten years, had insidiously progressed. He had frequently presented, during this period, from the effects of unusual exertion or fatigue, alarming symptoms of disturbance of the circulation; but these admonitions were rarely heeded by him, and the call of duty usually summoned him back to active work ere he was sufficiently refreshed and recruited by repose. The sacrifices of comfort which were thus made, the actual suffering which was daily endured, were never made known by any word or sign. He advanced steadily and uncomplainingly on his chosen path of duty, though he well knew it must soon conduct him to his own grave. I well know how displeasing it would have been to him to have any commendation bestowed upon his course, and probably we are all but little apt to recognize the heroic courage which lies concealed rather than is displayed, in the quiet unobtrusive life of many a faithful toiler in the cause of humanity. Yet surely there is no more real heroism than that which impels and sustains an ardent nature, bowed down by the burden of physical infirmity and suffering, in a course of continued self-sacrifice and painful endurance, which can end only when the life is finally laid down for the good of others. The spring of 1870 was to Dr. Rhoads a season of incessant toil and anxiety. Philadelphia was visited by a grave epidemic of relapsing fever, and the wards of the Philadelphia Hospital were crowded with hundreds of cases of the most severe form of the disease. After exposure for two months to the concentrated contagion, he contracted a mild attack of the fever in the early part of May, and, soon after convalescing from this, was attacked for the third time with articular rheumatism, which was followed by a recurrence of endo-pericarditis. For several weeks his life was almost despaired of, but the violence of the attack finally subsided, and during August he so far improved as

to be able to bear the journey to West Chester. This improvement was, however, delusive and temporary. He never became able to use any exertion, and was never free from harassing and wearying dyspnœa. In October, the vigor of the heart failed rapidly, and symptoms of great circulatory embarrassment soon showed themselves. From that time until January 15, 1871, the date of his death, his strength gradually failed, and œdema steadily increased, towards the close becoming associated with intense pulmonary and gastric congestion. His sufferings were protracted and extreme, and yet were borne with perfect resignation and silence. The sympathy of his many devoted friends was always gratefully received, but he rather seemed, through the strength of his endurance, able to extend comfort and reassurance to them, than to need any human help to bear his affliction. In the hours most free from physical suffering, he showed that his active interest in the welfare of his friends was unabated, and to the very last, even when speech was well-nigh impossible, he asked solicitously about every case of suffering or sickness which reached his ears. His intellect remained clear and active until a short time before his death: and after the power of conversing was lost, he passed several hours every day in listening to reading. A life which drew its inspiration and strength from above, had prepared him for receiving the most severe ordeal of physical suffering with willing submission, and with utter reliance that the hand which gave the blow was guided by Love.

Some of the lines which he wrote after the power of utterance was almost lost, contained the expression of an humble hope that his strength might be sufficient to bear this latest, most terrible trial of his faith and endurance. "The hand of God has indeed swept across my life, and all is changed. In the great shock I have waited, not altogether in vain, to realize that it is also the hand of Love. Why should anything make us sad but that which draws us away from our dear Saviour; and why should not everything which brings us nearer to Him make us rejoice? Oh, for His strength—His indwelling Spirit of strength and patience—that all the tempests and dark days of physical suffering may be endured, lived through, with something of real life, and finally triumphed over in Him, the conqueror of all evil—death, hell, and the grave." Death finally came, gradually and peacefully at the last, and closed his sufferings on the 15th of January.

His funeral was held in the Twelfth Street Meeting House, on the 18th, and was attended by a very large number who availed themselves of this last opportunity to express their love and respect for the friend they had lost. The various addresses and prayers which were offered, breathed the deep sorrow which was shared by all present, and showed, in no uncertain way, the rare position which Dr. Rhoads had held in the affection and esteem of many sections of our community.

His remains were laid to rest in the Friends' Southwestern Burial Ground, while scattering snow-flakes, fit emblems of this pure young life, fell into the open grave.

Thus early closed the life of one so rich in gifts, both of mind and character, that a career of rare usefulness and success seemed certainly to await him. Measured by the standard of those achievements which win the world's applause, his life may well seem imperfect; measured by the standard of those acquirements which increase and advance human knowledge, it may well seem to fall short; but when we measure it by a far

higher standard, that of a consistent conformity to the highest law of our nature, and of uniform devotion to the noblest purposes, it cannot fail to elicit our admiration. The fame awarded by the world is mostly given only as the prize of great achievements, and hence it must always follow that comparatively few of the really great men can ever receive full recognition. Where one is afforded ample opportunities for exerting his full powers, and a long life in which to bring his work to completion, many are either never offered the suitable occasion, or, saddest of all, are stricken down in the midst of their successful efforts too early to have accomplished aught worthy of their powers. The opportunity of judging rightly of such lives, where capacities, not deeds, are to guide the judgment, must always be limited to the comparatively small circle of each one's intimate friends. But to these the true fame and eminence of the man are clear and established; they feel the deep truth of the words—

> "The greatest gift the hero leaves his race
> Is to have been a hero,"

and ever treasure the memory of that apparently fruitless and imperfect life as a proof of the lofty capacities of our nature, and as an undying type of true greatness.

It is thus that we may well preserve green and unfading the memory of Edward Rhoads; as of one whose life was cut short before he had realized any of the lofty aspirations which he possessed, but who yet lived long enough to show us the beauty and power of a nature, ardent and intense, yet in rare subjection to the divine law, and of high talents and varied graces of character, all blended and devoted, in entire self-forgetfulness, to the relief of suffering and to the happiness and good of others.

However we may mourn the early death which curtailed the influence and usefulness of such a life, and prevented the development and fulfilment of his life's work, yet can we recognize the completeness of the nature, the lofty endowment of mind and heart, which stood superior to the accidents of time or circumstance, and placed the stamp of true greatness on this man. *Integer vitæ, scelerisque purus* we might well engrave deeply and imperishably as his fitting motto on his tomb—but still more deeply and ineffaceably in our hearts.

# SUMMARY OF THE TRANSACTIONS

OF THE

# COLLEGE OF PHYSICIANS OF PHILADELPHIA.

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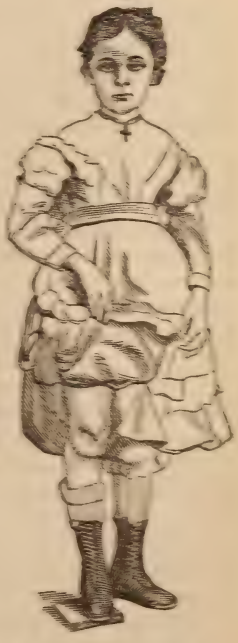
1872. *Feb.* 21. *Excision of the Knee.*—Dr. JOHN ASHHURST, Jr., exhibited a patient on whom he had performed an excision of the knee at the Episcopal Hospital nearly a year previously. The patient was a girl of eleven years, who at the age of five had suffered from smallpox, following which she had arthritis of both elbows, and of the right knee-joint. In the elbows, the disease terminated in firm anchylosis, and, the joints being flexed at convenient angles, she enjoyed very good use of her upper limbs. In the knee, however, the arthritis recurred from time to time, the last acute attack having been about two months before the date of the patient's entrance to the Hospital, and the appearance of the joint when she was admitted being very characteristic of advanced disease of the articulation. The knee was flexed to a right angle and very much swollen, the subcutaneous veins enlarged, and the tibia dislocated backwards and outwards. The joint was tender on pressure and painful when moved, and the patient thin and anæmic. Excision was performed on Feb. 28, 1871, by means of a single transverse incision, the condyles of the femur, articulating surface of the tibia, and patella being removed. Five or six small vessels were secured with ligatures, and the wound closed with wire sutures and lightly dressed with oiled lint, while the whole limb was firmly fixed upon a bracketed posterior splint, which was not changed until some time in the fourth week. Convalescence was retarded by a profuse epistaxis which occurred a few days after the operation, leaving the patient blanched and exhausted, by rather profuse suppuration (several abscesses having formed above the site of excision), and by a troublesome diarrhœa which beginning in the month of April continued at intervals through the summer and at one time became a

Fig. 1.

Fig. 2.



really serious complication. Firm bony union was completed about the third or fourth month, but several superficial sinuses persisted and did not entirely heal until three or four weeks ago. The patient now (Feb. 1872) walks readily, without any assistance whatever, though of course with a perceptible limp, due to the shortening which is found by measurement to be an inch and three-quarters. She has grown considerably since the operation, and is now fat and hearty, and in her present condition offers a very satisfactory evidence of the great advantages to be derived from this branch of conservative surgery.

Photographs were exhibited, showing the appearance of the patient before the operation and at the present time. (See figs. 1 and 2.)

*April* 17. *Lacerations produced by a Lion: Death in forty-eight hours from Traumatic Gangrene.*—Dr. JOHN ASHHURST, Jr., reported the following case: J. W., aged 25, a professional lion-tamer, engaged with a menagerie now exhibiting in the outskirts of the city, was rehearsing his part on the afternoon of Tuesday, April 2, 1872, and had placed his head in the lion's mouth, when the animal unexpectedly closed his jaws; the by-standers rushed to the rescue, and with clubs and iron bars, forced the wild beast to loose his hold, when, had his victim made his escape, he would have got off with moderately severe lacerations of the face; unhappily, however, either falling in the cage, or, as other accounts have represented, voluntarily returning with a mad determination to obtain the mastery, the unfortunate man again came within the lion's grasp, was quickly struck down, and the monster's jaws again closed, this time upon the fleshy part of the victim's right thigh. Again the wild beast was driven off, and his conquered conqueror was dragged from the cage, bleeding profusely, and seeming more dead than alive. This was about four o'clock in the afternoon, and the wounded man was taken to a neighbouring tavern, from which he was brought, a little before midnight, to the Episcopal Hospital. When admitted, the patient was in a state of profound shock; there were several lacerations about the lower part of the face and chin, the largest wound having laid open the right cheek into the mouth, while on either side of the right thigh were numerous irregular and jagged openings,[1] varying in length from a few lines to two inches, or even more; these wounds appeared to be of great depth, the muscles of the limb having been evidently torn up and mangled in a frightful manner, though the bone, and, as far as could be ascertained, the femoral artery, seemed to have escaped injury.

I did not see the patient until about 2 P.M., April 3, when I found him in a manifestly hopeless condition. His pulse was extremely feeble and running at the rate of 172 beats to the minute, his respirations being about 40 in the minute, while his injured thigh was enormously swollen, emphysematous and crackling from the gaseous products of decomposition, and discharging profusely from its various wounds a bloody, sanious, and very offensive fluid; it was, in fact, in that condition, known to surgical writers as true "traumatic, or spreading gangrene." This condition had come on during the night (as I am informed by Dr. Simes, the house-surgeon), and, therefore, in less than eighteen hours from the time of the patient's injury.

I saw the patient again the next day, when he was evidently mori-

[1] These had been *carefully sewed up* by a Homœopathic practitioner who attended the patient before his admission to the hospital.

hand; there was no pulse at the right wrist, and that on the left was barely perceptible; the right leg, below the knee, was now white, cold, and corpselike, while the thigh was swollen almost to bursting, black in parts, with the muscles protruding through the wounds, and exhaling a most offensive smell; the discoloration of impending gangrene had already reached the buttock. While thus fully a quarter of the patient's body was literally dead and decomposing, his consciousness was perfect, and his mind clear, when he was spoken to, though he occasionally wandered off in delirium when left to himself. He complained of almost no pain, only a little, he said, about the feet. He died two hours afterwards, just forty-eight hours from the time of his injury. No autopsy could be obtained.

This case is of interest, both on account of the unusual character of the injury (in this country at least), and on account of the early onset, and rapidly fatal course of the terrible form of gangrene by which it terminated. The only hope of recovery (and that, of course, a slight hope) for this unfortunate man, would have been found in immediate amputation, at or near the hip-joint; when the patient first came under my observation, his general condition was such as to forbid a resort to any operation whatever.

In answer to questions which had been asked, Dr Ashhurst said that he did not see any evidences of septic poisoning; he thought it quite probable that the patient was the subject of visceral disease, although this could not be determined, as no autopsy was permitted.

*Case of complete Prolapsus of the Rectum in a Patient previously treated for Exstrophy of the Bladder.*—Dr. JOHN ASHHURST, Jr., reported a case of prolapsus of the rectum, treated by the application of fuming nitric acid. The patient was a child on whom Dr. Ashhurst had operated more than a year ago, at the Children's Hospital, for extroversion of the bladder (see number of this Journal for July, 1871, p. 70), and the rectal prolapse, which was complete (all the coats of the gut being invaginated, and protruding to the extent of about four inches), had existed since she was six months old. Instead of applying the acid in the way ordinarily recommended, through a fenestrated speculum, Dr. A. had followed the plan lately advised by Mr. Allingham, by painting the whole circumference of the protruded bowel in a broad band, sparing, however, the half-inch next to the anus. Before applying the acid, the gut was thoroughly washed and dried, and subsequently well-oiled and returned within the sphincter; the rectum was then plugged with charpie (as a substitute for the cotton-wool recommended by Allingham), and a firm compress applied to the anus, and held in place with broad adhesive strips and a bandage. The patient was, of course, anæsthetized before the operation, and opium was freely given afterwards to relieve the inevitable tenesmus, a cathartic being administered on the fourth day.

It was intended to strictly follow Mr. Allingham's directions, by allowing the rectal plug to remain in place four days, but in spite of all the precautions that had been taken, the rectum relieved itself of its contents the night after the operation, the gut, however, not protruding, and no re-descent occurring for twenty-three days. A second application made a few weeks later by Dr. Valdivieso, the house-surgeon, was more successful, for, though the patient on this occasion tore off her dressings the night after the operation, there has been, as yet, no re-descent of the

bowel, though nearly three months have since elapsed; the patient has now normal daily stools, without pain and without any tendency to prolapsus, a state of affairs which has not existed before, since she was six months old.

It may be added that the result of the plastic operation performed to cover in the extroverted bladder, continues to be satisfactory. The inverted skin has assumed the feel of mucous membrane, and a pouch is formed in which the urine accumulates, so that, in the recumbent posture, the patient can hold her water for about two hours, and, when walking or sitting, for about half as long.

*August*, 1872. This patient has since gone home, perfectly well.

*Sept.* 3. *Specimens of Tænia Nana.*—Dr. E. A. Spooner presented these entozoa which, he observed, answer perfectly the descriptions of Bilharz and Leuckart, showing a large, obtuse, quadrangular head, long narrow neck, becoming broader in the body, until, at the terminus, it is three times the width of the head. The entire strobila is 8 to 10 lines in length, having from 150 to 170 segments.

These tænia were passed by a young man, who has presented symptoms of general debility, occasional colicky attacks, diarrhœa, severe frontal headache, disturbance of vision, with slight febrile exacerbations occurring at irregular intervals during the past two weeks. It has been impossible to discover larvæ in the excretions, and it is to be hoped that the cephalalgia and disturbance of vision are symptomatic only of the intestinal derangement. Up to the present time no marked emaciation has occurred, the appetite is less fitful, and the vision is more perfect, but the pain in the head has not much abated.

*Oct* 16. *Case of Placenta Prævia.*—Dr. Walter F. Atlee related the following: Mrs. P——, whom I had twice attended in confinements several years ago, came to this city from New Orleans, about two months since, when she supposed herself to be about seven months gone in her third pregnancy, to be confined here. She observed nothing remarkable in her state, except an unusual sensation of weight in the lower part of the abdomen.

About one month after her arrival, after having made a great effort in raising something, she experienced a gush of blood from the vagina. On examination, I found reason to believe that the placenta was near the mouth of the womb. After rest for some days in the horizontal position this discharge ceased.

A week ago I was aroused at night by a call that she was dying from a sudden hemorrhage, and, on reaching her house, some few squares distant, I found her almost lifeless from loss of blood. I gave at once a teaspoonful of the fluid extract of ergot, and, passing a uterine sound through the mouth of the womb, which was slightly open, I made a hole through what was over the mouth of the womb, and, very firm pressure being kept up externally against the belly, emptied the womb of its fluid contents. The pressure of the child's head at once stopped the profuse bleeding.

The mouth of the womb was gradually dilated, the whole hand being in the vagina; the placenta was removed, and after that the child was delivered head foremost. The child, of course, was lifeless. It appeared to be at full term. The mother is now out of danger—at least all danger from the hemorrhage.

[The following resolutions, prepared by a committee, consisting of Drs. Stillé, Bell, and Coates, were adopted by the College at a stated meeting held July 7, 1869.

*Resolved*, That the College of Physicians have been grieved to learn of the death of their Fellow, Dr. Charles D. Meigs, who had become equally venerable in character and in age, and had crowned with honor an eminent and useful career.

*Resolved*, That of our deceased friend it may be truly said that his heart was as warmly benevolent, and his actions as generous, as his manners were genial, kind, and winning. Zealous and conscientious in discharging his professional duties, he regarded no sacrifice of time, rest, or comfort too great when its purpose was the relief of suffering, and especially when its objects were young mothers and their tender offspring, by thousands of whom his name is blessed and will be held in grateful remembrance. Endowed with an enthusiastic love of the beautiful and true, and with a refined and delicate taste, both in nature and in art, he was not the less eager, as a scholar, to appropriate to himself the wisdom and experience of ancient times and foreign countries, for which purpose he maintained a familiarity with the classics and with several modern languages, and with equal zest enjoyed their scientific and their literary wealth. Thus copiously furnished with thought and expression, and with the fruits of an extended, varied, and well-studied experience, he naturally became a successful teacher of his favorite art, enchaining the attention of his audiences by earnestness of manner, clearness and elegance of diction, and richness of illustration, as well as by many original views in the theory and practice of medicine.

*Resolved*, That the personal and professional life of Dr. Meigs conspicuously illustrated the high principles which should govern a physician's conduct in his relations to his brethren, his patients, and society, and may be safely appealed to as an example and a guide.

*Resolved*, That a copy of these resolutions, properly attested, be communicated to the family of Dr. Meigs.

In accordance with a further resolution of the College, Dr. John Forsyth Meigs was appointed to prepare a biographical memoir of their deceased Fellow.]

At a stated meeting of the College, held November 6, 1872, Dr. J. Forsyth Meigs, in fulfilment of the above resolution, read the following

# MEMOIR OF CHARLES D. MEIGS, M.D.

Fellows of the College of Physicians of Philadelphia.

Gentlemen: When I accepted the request of the College, made through its proper officers, to prepare for its archives a biographical sketch of its late member, my father, Dr. Chas. D. Meigs, I did so with much diffidence.

I feared my relationship might warp my judgment, and my filial love exaggerate his merits. But who could know him as I knew him? Not only did I pass all the usual time which a son, reared at home, spends under the paternal roof, but, under the power of a great misfortune which occurred to myself, after having been separated from him for the period of twelve years, I again took up my abode with him during, with very few interruptions, the remainder of his life. Not only this. We were of the same profession. Our interests, moral, intellectual, social, and economical, were linked together. The same subjects interested us equally, and I came to know him, or ought to have known him, better than any

ordinary or professional acquaintance could have done—better than most sons can know their fathers.

Should I, in the notice of his life, which I am about to read, portray his virtues too highly, or his defects too lightly, I must beg you to excuse me for the reason that he was my father.

I desire to state, also, that portions of this sketch were prepared by my son, Mr. Harry I. Meigs.

I suppose I am not different from other men, and being myself always anxious to know from whence men of mark have come, and under what conditions they may have developed, I assume that others have the same taste, and I shall, therefore, dwell at greater length upon my father's family, and upon the circumstances connected with his early life, than is always done in these formal sketches.

I will speak of his family at the risk of being prolix, for I could not paint his true character without referring to his progenitors. He was fond of his genealogical tree, though it was not a very tall one, but he insisted that it was most respectable, and that it was the duty of all men, when they could, to teach their children their family history, and to place before them the rigid duty incumbent upon them, to do whatever might be in their power to promote its honorableness before men. Many a warning did my brothers and I receive from him not to disgrace the stock from which we had come. I believe firmly that these appeals from him, this faith he had in the honor and respectability of his ancestors, had a positive influence upon his own children, in lending them a motive towards uprightness in their walk through life. That such teachings are not more common in our young country is, I think, a misfortune. Not that he ever taught us that a man should rest his own foundations on mere traits of family history, but that he should beware lest he disgraced that history.

At the end of his family Bible, he wrote, on the 25th March, 1862, at Hamanassett, his country seat, a note addressed to his children, in which he says: "My desire is that you should carefully preserve, each one of you, the record of our family.

"If all men could be induced to preserve their family records, discarding without mercy every member of their blood-line whose conduct might stain it, society would derive great security, and virtue a strong support from that course.

"If it should be deemed unfair to ignore discreditable members of a line, then at least let a mark of disapprobation be set opposite their record."

It was in this way that he spoke to his children all through his life, and it must have been in the blood, for I happen to know that my grandfather and my great uncle felt and wrote in the same style. It was an inherited trait. Habit, says Darwin, is omnipotent, and its effects hereditary, and how do we know that the wise and virtuous life of my father may not have been in part the result of such opinions firmly held by those who had gone before him, and by them transmitted to him?

My father came, on both sides of the house, from a New England stock, people of very moderate possessions as to worldly goods, who earned, as farmers, the means of living from the cold soil of Connecticut, or who, as small manufacturers, and sometimes, as I have reason to believe, as hatters, were well inured to daily labor, and to habits of simplicity and economy. They were people of strong natures, bringing into the world large families, receiving them with thankfulness and without

fear, and rearing them in habits of honest industry. They were patient, too, and submissive to the decrees of Providence, as witness the conduct of my father's great grandfather, Janna Meigs, who, amongst nine children, had twins born to him on the 5th January, 1711, and who named them Silence and Submit. The story goes, that on the announcement of the arrival of the first, to check the rejoicing of the family, he said "Silence;" and on that of the second, moved by his patient spirit, he said, "Submit." The twins afterwards were given these names.

My father was the fifth of ten children born to Josiah Meigs. Josiah Meigs was in the sixth generation from Vincent Meigs, who came to this country from Dorsetshire, England, with his son John, and settled in East Guilford, Connecticut, about 1647 or 1648. This Vincent Meigs died in East Guilford in 1658. From Vincent Meigs down to my grandfather, my father's direct ancestors adhered to the flinty soil of New England, and lived their lives, such as they were, surrounded by and fully blended with the political, social, and religious faith of those days. A story is told of one of them who was dealt with by the authorities of the day, for breaking the Sabbath, in a way which would seem, in these times, the most besotted rigor and fanaticism. I found the account in a letter to my grandfather, from a Mr. Lee, of East Guilford, 7th April, 1816. It was shown me by Mr. R. J. Meigs, of Washington.

This gentleman sends a copy of the proceedings of the court as follows: "At a regular court held at Guilford, December 4th, 1657, John Meggs being called for on a complaint, that he came with his cart from Hamanassett late in the night on the Lord's day, making a noise, as he came, to the offence of many who heard it, then appeared and answered, that he was mistaken in the time of the day, thinking that he had had time enough for the journey. But being somewhat more laden than he apprehended, the cattle came more slowly than usual, and so cast him behind, it proving to be more late of the day than he had thought. But he professeth to be sorry for his mistake and the offence justly given thereby, promising to be more careful for the time to come.

"The court considering the premises did see cause (seeing that the matter seemed to be done through a surprisall, and not wittingly) to pass it over with a reproof for this first time, on his giving a public acknowledgment of his evil in so neglecting to remember the Sabbath, on the next lecture or fast day, with all the aggravating circumstances in it.

Signed, WILLIAM LEETE."

This Wm. Leete was governor of the colony of New Haven, and after the colonies of New Haven and Hartford had been united, was governor of the State, and there is no doubt he was a true Republican, for he secreted for some time three of Oliver Cromwell's generals—Goff, Dixwell, and Whalley.

My grandfather, Josiah Meigs, was the thirteenth child of his mother, and was born in the 49th year of her age. He married Clara Benjamin, of Stratford, Connecticut, January 21st, 1782. This lady, my grandmother, was descended from John Benjamin, who settled at Watertown, Massachusetts, in 1632, and died there June, 1645. Her father was Col. John Benjamin, who lived at Stratford, Conn., 1731, and died there in 1796, partly from a bullet wound received at the battle of Ridgefield in the Revolutionary war. This gentleman had named his youngest son Charles Delucena, after a Spanish gentleman to whom he had become

strongly attached during the war. My father's name was given him in remembrance of this uncle.

Amongst some notes in regard to the family, left by my father, I find the following account of my grandfather. He says: "My father, Josiah Meigs, a native of Middletown, in Connecticut, was the son of Return Meigs of the same city. . . . . My father was educated at Yale College, after having labored in his father's (Return) vocation (a hatter) for a few of his early years. He was an excellent Greek and Latin and French scholar, and made high attainments in mathematics. He cultivated with some success a love for the sciences of botany and geology, and as a general litterateur and scholar had few superiors, so that, take him all in all, it will be rare to meet with a person of more extensive and diversified knowledge than was possessed by that gentle and good man." After his marriage he went, somewhere about 1789 or 1790, to St. George's, Bermuda, to practice as a proctor in the courts of admiralty. He soon became tired of this work, and longing for his native country, returned and settled in New Haven, where he was soon after elected professor of mathematics and natural philosophy at Yale College.

He was a man of fine culture, and was always longing to be amongst his books. Years after he had left Yale College and the Georgia University, and when he was General Land Commissioner in the city of Washington, I may mention, to show his general interest in scientific matters, he endeavored to establish in Washington a system of meteorological observations, which might well have been the foundation of the present bureau. In 1817, as he wrote to Dr. Drake, of Cincinnati, he had applied to the national legislature for authority to make it the duty of the various land agents under him to take observations on temperature, pressure, rain, wind, etc., and suggested Detroit, St. Louis, Opelousas, St. Stephen, etc. etc., as points to begin with. He also asked for a small appropriation for the purchase of the necessary instruments. He says in one of his letters: "Without some system of this kind, our country may be occupied for ages, and we, the people of the United States, be as ignorant on this subject as the Kickapoos now are, who have occupied a part of it for ages past."

My father's early years were passed under very different circumstances from those which have attended the lives of most of the fellows of this college; and if the words of the great philosophic poet, "the child is father to the man," be true, the days of childhood must have much to do with a man's after years, and the college will not, I hope, think me tedious or unwisely prolix if I tell here some of the particular circumstances under which he grew up.

He was born in the island of St. George's, one of the group of the Bermudas. If we suppose that, even in infancy, impressions are made on the soul never to be effaced, we can well imagine that the scenes amidst which he was born, and where he passed the earliest period of his life, had something to do with the large imaginative faculty he exhibited through his life. "Nothing," says a writer who was well acquainted with St. George's, "can be more romantic than the little bay of St. George's; the number of little islets, the singular clearness of the water, and the animated play of the graceful little boats gliding between the islands and seeming to sail from one cedar grove to another, form altogether the sweetest miniature of nature that can be imagined. In the short but beautiful twilight of their summer evenings, the white cottages

scattered over the islands, and but partially seen through the trees that surround them, assume often the appearance of Grecian temples, and embellish the poor fisherman's hut with colors which the pencil of Claude might imitate."

My father was born on the 19th of February, 1792. I have already said that my grandfather had gone to St. George's to practice as a proctor in the English courts of admiralty. They remained there until May, 1796.

From this beautiful southern home he was taken to the ruder climate, and to the very different atmosphere, intellectual, social, and religious, of New England. My grandfather was made professor of mathematics and astronomy at Yale College, and under the shade of that college at New Haven my father passed the period of life between two and nine years of age.

The domestic and social atmosphere of a small town in New England, the seat of a great school of learning, with the added influences belonging to the household of a professor of mathematics, must have had great influence in the formation of his moral and mental character. Here he must have imbibed much of that strong sense of duty which he carried through life. Honesty, honor, love of country, inflexible uprightness, liberality of mind, and love of knowledge were here implanted in him. His father, a student always, and a teacher; his home the seat of scholarship and of moderation. No love of money for money's sake. I cannot but think that these early associations had much to do with that thirst for knowledge, that love of science and literature, which he exhibited to the very last day of his life.

In 1801, when my father was eight years old, the family left the cold north for the warm south again, and he was now removed to the air and moral atmosphere of the State of Georgia. At Athens, a little town in Clarke County, Georgia, within twenty-eight miles of the border, beyond which still roamed the tribes of the Cherokee and Creek Indians, was to be built up a new institution of learning, the University of Georgia, and my father was to see the very birth and growth of the college which was to be his Alma Mater, and where he was to acquire that knowledge of the classics, of the severe sciences, and of the French language, which was to aid him in the strife of a long and arduous professional career.

Clarke County, Georgia, in which Athens is situated, is a healthy, but not a fertile region. At the time when my grandfather removed there it was a wild place, and but thinly populated. I could not find the population in the census of 1800, but in that of 1810 the population of the county is set down at 7628, and that of the town at 273; of these latter 95 were white males, 40 free white females, 134 slaves, and all other free persons, except Indians, not taxed, 4.

The family, except my grandfather, remained for some time in Augusta, whilst he proceeded to Athens to superintend the erection of the college buildings, and also of a house for himself. In a letter dated Athens, but without other date, to his brother, Col. Return Jonathan Meigs, then Indian Agent at Hiawassee, in Tennessee, he says: "I arrived at this place two days ago. Here is the seat of the University of Georgia, over which I preside. We are making bricks for a large college building, 120 feet long, 45 wide, and three stories high. We have plenty of timber all around us, and thus far everything looks very favorable to the completion of the building. Our great difficulty is the procuring of lime. This part of the country affords no limestone." This was in 1801, for

there is another letter, dated Athens, Sept. 25th, 1801, in which he thanks his brother for his attention to the limestone, though he does not say whether he obtained any or not. It appears from White's Georgia, published at Savannah, in 1849, that liberal endowments had been made to the Franklin College or University of Georgia, as early as 1788, but that it did not go into operation until 1801.

So that my father, having first seen the light under the soft summer sun of the Bermudas, having then been removed to the cold New England climate, where he passed seven years under the very shadow and protection of one of the greatest learned institutions of the day, now found himself at a little frontier town, whose population numbered only two hundred and seventy-three souls, in a slave instead of a free State, where he was to witness the laying of the foundation stones and the building up of the walls of a new institution of learning. Here, in this little village, in a semi-wild, sparsely-inhabited country, rolling in character, elevated, healthy, with great forests all around, a beautiful, rapid river—the Oconee—close by, was he to spend the latter years of his boyhood. Within twenty-eight miles of him was a country still occupied by the native Indian—the various tribes of the Cherokees, Creeks, Choctaws, and Chickasaws—and but a short distance from this near frontier, at Hiawassee, in Tennessee, lived his uncle, Col. R. J. Meigs, his father's elder and best-beloved brother, who at this time, and for many years after, was the government Indian agent, having these tribes in his care. This gallant gentleman had fought all through the Revolutionary war, had received a sword from Congress for gallant conduct on Long Island. He had accompanied Arnold to Quebec, and there been taken prisoner, and had led one of the storming parties at Stony Point under Wayne. He must have been a man of rare qualities. He was over six feet in height, and at eighty-two years of age walked with the step of a young man, erect as a tree, and light and free. His character was such that his brother always speaks of him in his letters with an almost reverent affection and admiration. He was called by the Indians, whom he so long watched over, the White Chief.

It must have been a curious admixture of law and lawlessness, of wild nature and cultivated humanity, of education and refinement, and of ignorance and downright barbarism, in which my father now found himself placed. In the centre the little town of two hundred and seventy-three inhabitants, with its new collegiate buildings slowly lifting themselves from the rude soil on which they had but just been planted; around the town, no doubt, some few cultivated fields; the river running fresh and sparkling from the mountains to the north and west; and, only a few miles off, the wild native forest, as yet untouched by the hand of man. Here was a spot, a climate—forest and stream, hill and dale—well calculated to tempt a hardy, active, and most restless child to the pursuits best fitted to develop a strong and vigorous body, to train the eye and ear, and indeed all the perceptive faculties which are so much needed for the acquisition of all knowledge, and especially of the arts of human life. Not only so, but the basis of that decision of character, which, under the various terms of courage, pluck, grit, endurance, constitutes, it seems to me, the chiefest element in the mental constitution of most of our ablest and most successful men—that predominance of will which comes of a sound, robust body, and which we ought all to endeavor to evolve in our children—must have here been laid in my father, broad and deep.

But not only were the outer scenes, in which he was now to live, calculated to develop robustness of body and mind, but the circumstances of the family were such as to promote the wholesome virtues of economy, patience, and sobriety in all things. What his father's income might have been from the college endowments I know not, but it must have been small, for the household was generally but poorly supplied with money, and at times had so little that it may well have looked forward with anxiety as to the supplies for the next day, as will be shown by a story my father was very fond of telling—to his children first, and to his grandchildren afterwards.

My son tells the story as he heard it often from his grandfather's lips. "My grandfather's father was a professor of mathematics in one of our Northern universities, and like many distinguished wits of a hundred years ago was always out of money, not from any bad habit of borrowing or lending, but from the very flow of charity that welled forth in his big heart toward all who were in need. Though a strict Presbyterian himself, the catholic doctrine of good works was the very corner-stone of his creed, and of him it might literally be said that, if a man asked him for his coat, he gave him his cloak also. One day, in Athens, my grandfather, who was then called Charlie, saw a man on the bank of the Oconee, with such a big fish that its equal had never been known in those parts, and the simple people thought it must have been raised by magic, or that the day of judgment was come, which, indeed, is the commonest way for our country people to understand anything unusual. My grandfather at once had an eager wish to become the possessor of it, and he ran to his mother, and begged her to give him a dollar, which was the price of the curiosity. 'My son,' said she, 'there is but twice what you ask for in the house, and would you take the half of all that I have?' But the boy's thoughts were full of the fish, and he could not listen to moral philosophy. So his mother, being a woman of great generosity, and seeing that remonstrance was vain, gave him what he asked for in the shape of one of those clumsy silver dollars that have now passed entirely out of use. Charlie put it into his pocket, and ran down to the river; but, as he went swinging his jacket round his head like a sling, it is no wonder that when he reached the bottom of the hill, what with the centrifugal force of the jacket and the force of gravity of the coin, the dollar was gone, and he found himself as poor as when he first coveted the fish. For an instant he was in terrible grief, but quickly the buoyancy of his mind overcame all sadness, and he ran back again to his mother, to ask for the remaining dollar. The good woman had by this time caught some of her son's fire, and with scarce a murmur she gave him what was left of her estate, thinking perhaps, in her simplicity, that, if the fish was really so great, it might serve the whole family for food until a fresh instalment should be paid to the worthy President."

But not only did my father have the advantages of the healthy climate and simple habits of this little village, where learning and refinement were so curiously blended with the rude nature around, and with the people that made up its small population; he became familiar with many of the phases of a truly savage life. He had made the acquaintance of a certain Jim Vann, a well-known and conspicuous Indian of the Cherokee tribe, who had a store on the frontier, twenty-eight miles from Athens, and who often passed through Athens on his way to or from Savannah to make purchases and carry his goods home. On one occasion, when on his way

down to the coast, he said to my father, "Now, Charley, if your mother will let you, I will take you back to the Indian country when I return, where you can see how we live, and I will give you the finest Indian (Injin) pony in the country." How often have I heard him describe his delight at this offer and promise! Vann was to be absent several weeks, and during these weeks my father laid such diligent siege to his mother that, though at first she flatly and with high indignation refused even to listen to such a project, he never ceased to beg and entreat, and knock, until finally, in very despair of escape from his knockings, she yielded, and it was agreed that when Vann returned he should be allowed to go with him. And so it happened that after waiting long for Vann's return, until hope almost died out, he found himself one day in the early part of January, 1805, mounted behind the Indian on a powerful black horse on his journey to visit these natives in their own country, and to live for a while amongst them in their own ways. I fix the date accurately, for I find, in a letter from my grandfather to his brother, dated Athens, February 11th, 1805, this passage: "Charles is now in the Nation, as I suppose. He went from us about a month ago in company with J. Vann, who promised to give him a horse. I expect him in a few days." The Nation must have been in a very quiet and orderly state, or he would scarcely have written in this cool way about his son, then not quite thirteen years old, who had left his home en croupe behind an Indian, known to be a most violent and brutal fellow in some moods, though generous and kind in others. Only four years later I find him writing again to his brother, April 23d, 1809, as follows: "Poor Vann has *ceased from troubling*, and the circumstance must be pleasing to you, for his death was a public blessing."

When I read this last passage of my grandfather's letter, about Jim Vann, which I did only this year in Washington, where I found a collection of his letters, I could not but think of the time when I, as a boy, used to listen open-mouthed to my father's accounts of his expedition with Jim Vann. As I grew older, I came to think that some of his stories about Vann's savagery and wildness must have been exaggerations, but when I found my grandfather writing to his brother, the government agent to the very tribe to which Vann belonged, that his death must be pleasing to him, and that it was a public blessing, I can well believe that all my father's stories may have been quite within the truth.

The Indian fulfilled his promise and gave the boy an Indian pony which he brought home with him. This pony was for years his most precious possession, and its speed, easy gaits, intelligence, docility, and hardiness, were described first to his own children, and then to his grandchildren, with a picturesque minuteness, which forever stamped the image of the gallant little horse on their minds.

From this time, 1805 to 1809, he resided with his parents in Athens, going on regularly with his various classical and English studies in the Franklin College. What kind of a faculty they may have had I do not know, but I do know that here was laid for him a foundation of classical knowledge which he never lost, and a thirst for learning which he carried literally to the last day of his life. The college must have begun its career in a very simple style, as he says in a very short sketch which he left of his early years, that when they moved to Georgia, his father found but three or four houses in Athens on arriving there, and that they erected a wooden hut which served as recitation room and chapel.

The dwelling-house which the president occupied, and which was prepared for him by the trustees, was seated on the brow of a considerable hill, and consisted of a frame building of the plainest kind. It had a basement story first, apparently not below the level of the ground, a second story, and an attic. The main story was reached by steps from the yard, and these steps ascended to a piazza or veranda, running the whole front of the house, the roof of which piazza consisted of an extension of the roof of the house. At the gable ends were brick or clay chimneys. The house was low and very plain, and could not have had many rooms in it, so that where they bestowed all the children, and yet gave the president any room to himself, I cannot imagine.

In the little sketch of his early life I referred to just now, he says: "After getting settled at the house of the President of the University of Georgia, for such was my father's qualification, I began at the grammar school, which was soon set on foot, and here I learned my *penna*, a pen, and *regnum*, a kingdom, and even made a beginning in the Tupto and Agapo, a dreadful labor to a child who would have much preferred to wade in Hall's branch, or stand on the river's bank and see the water as it flashed and boiled amongst the rocks of the shoals of Oconee hard by at the bottom of the hill."

Here is another passage describing his early life in Athens. "Thus in the wild woods of Georgia, by the perseverance of my worthy father, were the blessings of literature and philosophy begun to be scattered abroad in a new country—close by the frontiers of the savage Creek and the gallant Cherokee. The high sounding song of Homer, the sweet notes of Virgil, the stirring narratives of Xenophon and Cæsar, the denunciations, the suasion, and the arguments of Tully, heard no more in the native land of the philosopher, were familiar sounds on the air of Athens. And many was the boy who got under his kind and patient and wise teachings clear views of Kepler's laws, and they knew the risings of the Pleiades and all the gems of Orion's belt and the whole train of Ophiuchus huge. There were taught geometry, trigonometry, and conic sections. There we made beautiful projections of eclipses a thousand years overpassed and a thousand to come, and we painted the bright sun with gamboge to show how yellow his light is, and the shadow of the earth was a great cone of India ink, and the orbit of the earth was Prussian blue. These magnificent results of art were formed on sheets of paper pasted together to make one vast sheet, and hung up in the Philosophical Hall, where we had a telescope, an air-pump, and several other things to study and practice astronomy withal."

In Athens my father had the good fortune to find a professor of the French language, Petit de Clairviere, an intelligent and cultivated *emigré*, with whom he was very intimate, and with whom, indeed, I believe he lived a good deal. From this gentleman he gained a really fine French accent early in life, and an acquaintance with the language so full, that I have heard his French patients in Philadelphia declare that they knew no man that had not been in France, speak the language as well as he did. I can well believe, too, that he may have acquired from this gentleman some of the gentle and courteous manner which he had throughout his long professional career.

He graduated at the University of Georgia in 1809, as I learn from a catalogue of the institution which was kindly sent me by A. A. Lipscomb, D.D., the present chancellor. After his graduation he began the study

of medicine in 1809. He says himself that he began his studies under the roof of Dr. Thomas Hanson Marshall Fendall, to whom he became apprenticed. I believe this was in Augusta, and I suppose he may have had his board and lodging for his services. He says (in one of his lectures or sketches) that he lived three long years under the roof of his master, Dr. Fendall, and then went home. This must have been in 1812. I do not know what home this could have been but that of his sister, Mrs. John Forsyth, in Augusta. His father had resigned his presidency in 1811 and removed to Cincinnati, where he remained until 1814.

During his stay with Dr. Fendall he served as apothecary boy as well as medical apprentice, for I have often heard him laugh over his pestle and mortar experiences, and especially his manufacture of a certain plaster, of which he used to make, with long suffering watchfulness, and stirrings, great quantities. He was often sent out by his master to apply blisters, to cup, leech, bleed, and perform the various ministrations which the sick constantly need.

He attended, after leaving Dr. Fendall, two courses of medicine in the University of Pennsylvania, the first in 1812–13, and the second in 1814–15, according to my friend Prof. Carson.

I may mention, to show the difficulties he had to contend with, that he borrowed money to pay for his tickets and for the other expenses attendant upon his trip to the North. Some of these debts were paid after his marriage. Not that they were paid out of his wife's property. That was unnecessary, since he had a very good practice when he settled in Augusta, immediately after his marriage.

He states in one of his manuscript lectures, that he got one course of lectures at the University of Pennsylvania, and "then went home to set up for myself, and practice on that stock in trade. I was still lamentably ignorant of all save some methods. I was twenty-one years of age, and assumed to be a physician!! Everybody called me doctor; I thought so myself." This must have been in 1813, two years before his marriage.

I found from the minutes of the Trustees of the University of Pennsylvania, under the date of April 10th, 1817, that he was graduated at a commencement held in that year, though he was at that time still in Georgia. His name is given in the catalogue of graduates as being from South Carolina. The name of his preceptor is not given. The subject of his thesis was Prolapsus Uteri.

It was in Philadelphia, in the winter of 1814–15, whilst attending lectures, that my father met with the great good fortune of his life, in making the acquaintance of my mother. He had a letter from one of the large cotton merchants of Augusta to my grandfather, Mr. Wm. Montgomery, then a prominent and active merchant in this city. He delivered the letter, but made no intimate acquaintance with the family at first. Upon what slight chances do the fortunes of men often hang! My father took a whim one day to have a sail up the Delaware River, in one of the little sloops which then formed the means of water transport between this city and Burlington, Bristol, and Bordentown. On that very day, as it chanced, my mother and her sister were to go up the river to Bordentown, to pay a visit. On reaching the wharf to embark, their escort, by some accident, failed them. My grandfather, embarrassed to know what to do, suddenly espied my father on the wharf, about to go on board of the sloop. On seeing him, and finding that he was going up the river, he soon settled the matter. "Why, girls, here is Mr. Meigs, who is to

be your fellow-passenger; he will take care of you." And so agreeable and engaging did he prove in his care, that on that day was laid the foundation of my father's greatest happiness in life, for there he learned to value my mother for what she was, and there began that attachment which was to end only with his life.

I will not detain you with any account of my mother's family, except only so much as to show what manner of woman my father was drawn towards. Her name was Montgomery, and, on her father's side, she came of the Montgomerys of Ayreshire, Scotland, who carry their generations, according to history, far back into the past. She was worthy of any race, for she was just, true, faithful, devoted, and during my father's long and arduous battle with a large and most responsible obstetric practice in a large city, she never failed to make his home the home of virtue and moderation and calm. She bore him ten children, nursed them all herself, and was so faithful to them throughout, that, though several had most violent and prolonged attacks of illness during infancy and childhood, but one was wrested from her hands. Nine of those children live to this day to bear witness to the goodness, and justice, and devotion of the woman, who married in 1815 the young doctor from the far South (then called a Varginny student), whom, though without other fortune than his talents and fine character, she read truly as one to whom a noble woman might indeed be the crown and jewel of a wife.

They were married in Philadelphia, March 15th, 1815, at the close of the lectures. Dr. Jacob Randolph was one of the groomsmen. Soon after their marriage they sailed for the South, where my father was to go regularly into practice in Augusta, Georgia, in partnership, I believe, with a Dr. Cunningham. They reached Augusta safely, where they remained until the summer of 1817.

During this time my father had quite a large business, became popular, and was successful. I found amongst my grandfather's letters, one written from Washington, March 4th, 1816, to Dr. Drake, of Cincinnati, but just then in Philadelphia, in which he says: "There is some alarm here on account of a malady of the nature of Peripneumony. The Esculapii here appear not to have settled the question of the treatment. How true it is that a physician ought to be *vere Physicus*, a naturalist—master of nature. The diseases of particular positions vary, perhaps, as much as religious opinions. I do not believe that a man or a family educated in Norway, or in New England, in the severe habits of Calvinism, would, if transported to the vale of Arcadia, retain all the rigidity of the Reformer of Geneva. My son Charles, who is a physician at Augusta, Georgia, tells me (Feb. 18th, 1816), that the diseases there 'are most exceedingly sthenic, so much so, that I have been frequently compelled to bleed four, six, eight, and once thirteen times. Now, it is not more than sixty miles direct from this to Columbia, South Carolina, where, I am credibly informed, that the constitution of the atmosphere is so asthenic that one bleeding often is sufficient to produce death.' This, if true," comments my grandfather, "is very curious." Well might he say it was very curious, if true.

After residing a year and a half at Augusta, during which time my father had more than one attack of bilious fever, and my mother had been greatly shocked by some of the scenes incident to the slavery system, my father determined to remove permanently to the North, and to seek his fortune there instead of in the scenes of his youth. And happy was it for

him, and I may safely say, for medical science and for his children, that he carried out, with a resolute spirit, this removal.

He left Georgia in 1817, as I know accurately from a letter of my grandfather, who writes to Dr. Drake from Washington, June 13th, 1817. "My son, the doctor, will, I trust, be a useful citizen in his profession. He has left Georgia to reside in Philadelphia, where, through the assistance and influence of his father-in-law, I think he will be able to establish himself advantageously. He pursues the sciences relative to his profession *con amore*, with ardor and enthusiasm. He is a truly worthy and excellent young man. This you will believe, though his father says it.

"He sailed from Charleston, S. C., on the 5th of the month, and in *three* days arrived in New York! We knew he was to sail at that time, and as *we* had a *northeast* storm at that period, we predicted for him a boisterous and tedious passage, but he writes me that from Charleston the ship was immediately placed eastward of the Gulf Stream, and took a *southeast* current of atmosphere which drove them like an arrow from the bow, through the whole transit, without variation of force or direction. This is a curious meteorological fact." This letter was written about the time that he was discussing with Drake his plan for having careful and extended meteorological observations for the whole country.

When the family reached Philadelphia they settled in a small house in Eighth Street above Race, on the west side, where they lived until after the death of my grandmother, when they removed to my grandfather Montgomery's house, in Arch Street above Sixth.

He obtained practice only very slowly, the position of his wife's family in society doing him no more good than to convey to a certain moderate circle of people the information that there had arrived in the city another aspirant for employment in the medical profession. As usual his wife's relatives did not, and indeed they could not, be expected to employ him in so delicate a position as that of physician, until he had in some measure shown himself fit to be so trusted. Gradually, however, business came to him; first, the poor and destitute, and then slowly those in better circumstances.

In the meantime he studied his profession and belles-lettres. He soon joined the Medical Society of Philadelphia, and was a very active and useful member. He took part in many of the discussions, and showed the members of his own profession what manner of man he was. He soon became intimate with Drs. La Roche, Hodge, Bond, Coates, Wood, Bache, and Bell.[1]

Dr. George B. Wood, in his very interesting "Biographical Memoir of Dr. Franklin Bache," read before this College, May 3d, and January 7th, 1865, states that my father began to lecture on midwifery in what was called the School of Medicine in 1830, and continued to do this for some five or six years.

He was also one of the first editors of the *North American Medical and Surgical Journal*, the first number of which appeared in 1826, and the last in October, 1831. This journal, Dr. Wood states, was started by the Kappa Lambda Society of this city, in order to promote its ends, and was edited by a committee of its members—Drs. La Roche, H. L. Hodge, F. Bache, C. D. Meigs, and B. Hornor Coates. On the appear-

[1] He was elected a Fellow of the College of Physicians in 1827; was one of its Censors from 1841 to 1848; and was Vice-President from 1848 to 1855.

ance of the seventh number of the Journal there were added to the above Dr. John Bell, Dr. D. F. Condie, and Dr. G. B. Wood. These gentlemen, however, whose names now first appeared in the Journal, had co-operated with the previous committee from the beginning.

Besides these occupations he was a busy reader in many different directions. He devoured books with great ardor and rapidity. But even with these literary occupations he had, owing to his small practice, a good many unoccupied hours, and some of these he passed in a workshop he had arranged in the garret of his house. In this room was a very fine lathe which he had bought of Isaiah Lukens, one of the most noted scientific mechanicians of the day, and with whom he had become quite intimately associated in a mutual liking and friendship. Here he turned in metal and wood. Well do I recollect, when I could not have been more than six or seven years of age, seeing him hurry down stairs from the garret to the office, brushing as he went with his hands the dust and shavings from his vest and pants. I can see him now, as I recall those days, going rapidly down the staircase, with clouds of dust, wood parings, and chips floating after him as a trail. He had a carpenter's bench, too, with planes and saws, and all the paraphernalia of a carpenter's business. There was a beautiful little blacksmith's bellows, with a small iron furnace, an anvil, and a veritable sledge, all of which were objects of the most passionate admiration of myself and brothers.

Not content with the pursuits I have mentioned he drew, and tried his hand at painting, both in oils and water-colors. And it was not mere daubing in his case, for he had a fine artistic faculty, and could draw and color with very considerable skill. One of his portraits in oil, of an old nurse, one of those faithful women who had nursed my mother when a child and her children afterwards, was an excellent likeness.

Let not any one suppose that the time passed by him in these pursuits was lost time. Not so. The mind wearies and dulls when applied too persistently to one object of study; and it was wise in my father at this period of his life, when his practice was growing so slowly, to spend a portion of his time in the cultivation of his perceptive faculties. There can be no doubt that the free and easy use of these faculties which he thus obtained, was of great use to him in after life, when he was compelled to determine, by touch alone, the conditions of the patient and child in the lying-in-room, and to use instruments without the aid of the eye. He was the best nurse I ever saw, and could handle and move an ill woman, or a little frail, new-born child, with a grace, ease, and precision I never saw equalled. In after life, when a teacher of obstetrics, his knowledge of drawing enabled him to make diagrams and paintings with which to illustrate his lectures.

In addition to drawing and painting he tried his hand at modelling in clay and wax, and, when the time came, was ready to make models of those materials with which to teach the medical student many of the difficult anatomical, physiological, and operative portions of his art.

May I not say that I think the younger men in the profession might well take example after him in some such course as this? Had he not had these tastes and cultivated them, he might have passed the hours not devoted to study alone in mere useless society, in dawdling, in smoking, or worse, in the formation of some habits of dissipation.

As time went on his practice increased slowly, but steadily. And

now I shall mention a curious episode in his career, which may be reassuring to others in the future, and which shows what slaves to circumstances men often are. He had, in his early life, his average share of obstetrical practice, and then, as afterwards, as much success as others. He chanced, however, to have, at a certain period of time, several very difficult cases of child-birth, which greatly disturbed and tried his strength and nerves. In one of these he made a wrong diagnosis, and though no harm came of the mistake either to mother or child, he was so disgusted with himself for the error, and with the painful responsibility belonging to that branch, that he resolved to avoid it for the future, and for two years sent all such cases to one of his friends But he soon found that he made small headway in practice without obstetrics, and seeing his family growing, his expenses increasing, his years accumulating, he began to fancy that the wolf was approaching his door, and, for the sake of his family, he resumed obstetrics, and from that day went ever on with increasing business and reputation, until he had achieved the main duty of life—an honorable support for his family, the education of his children, and their establishment in positions for themselves.

Besides the pursuits I have already alluded to, he was interested in general scientific matters. I find him writing to his uncle, Col. R J. Meigs, the Indian agent, from Philadelphia, of the date of December 19th, 1820: "My dear uncle. I am exceedingly anxious to possess the skull of a Cherokee, a Choctaw, or Creek, or indeed of any other *pure* aboriginal inhabitant of the United States. I know no one to whom I can apply with a prospect of success like yourself; and, if you could oblige me, I should feel very grateful for it, while I should set much value on its acquisition.

"We are told that 50 or 60 years ago many of the Choctaws had their heads flattened by a peculiar process. I would be more gratified by the acquirement of such a skull than I can express. Perhaps you will oblige me. Provided you are able and disposed to oblige me, I should be pleased to be assured it is the skull of an Indian with no white blood in him.

"Mayhap your war chiefs may possess some such head which could be procured for me."

This letter was accompanied by one from my grandfather to his brother, dated Washington, Dec. 22d, 1820, in which he says: "I enclose with this a letter from my son Charles in Philadelphia. He is quite enthusiastic relatively to the sciences connected with his profession.

"He has four sons; his practice, in that wealthy and elegant city, is increasing, and I indulge a presentiment that he will do honor to his parentage and his name. If you can gratify his scientific wishes you will cheerfully do it." In a postscript he adds, "The inhabitants of Amsterdam Island are said to have very low foreheads—perhaps one inch between the eyebrow and the eye. To my good boy, who like me loves money less than knowledge, this object is interesting."

In 1831 he translated and published Velpeau's "Elementary Treatise on Midwifery," which was dedicated to Dr. James. The work must have been successful, since a second edition appeared in 1838.

The first independent work published by him was one entitled "The Philadelphia Practice of Midwifery."

It appeared in 1838, and was a small octavo of 370 pages. This must have had some success since it was exhausted in three years, as I find

from the preface to a second edition, in the form of a large octavo of 408 pages, which was issued in 1842. The preface bears date December, 1841, and in it he says: "Three years ago this work was issued from the press . . . . In the space above mentioned, the work has been exhausted from the book shelves, and I have been invited by the bookseller and publisher to prepare a second edition." This work was, as he states in the preface, "An exposition of the most common views upon obstetric subjects, whether theoretical or practical, as held among my medical brethren in this city."

The publication of this work and of his translation of Velpeau's Treatise, showed conclusively that he had taken up obstetrics as his special branch of medicine, and though he attended as a general practitioner, and had a large business in that way, his main strength was given to the study, by observation and reading, of obstetrics.

His reputation as a practitioner, both of medicine and obstetrics, grew fast, so that by 1835 he had acquired such a position and income that he determined to remove to a more central part of the city. Accordingly he bought, about that time, a house in Chestnut Street above Tenth, south side, in the very centre of the business and fashion of the day, where he continued to live until 1850, and where he obtained all the practice he could attend to.

In 1841 he was elected to the post of Professor of Obstetrics and the Diseases of Women and Children, in the Jefferson Medical College of this city, entering that school with his friends Dr. Franklin Bache, Dr. J. K. Mitchell, and Dr. Mütter.

This appointment gave him the first opportunity of showing fully what was in him. He threw himself into the work with the greatest ardor. He studied every thing connected with his branch. He re-opened his Latin and Greek authors. He studied German, and read indefatigably in that language, until, without being at all a finished scholar in it, he was able to read with some ease the most important German obstetric authors of the day. He took great pleasure in his lectures during the first years that he occupied the chair. They were a constant and agreeable stimulus to his mind, and, being new ground for him, broke into the tedium of his daily routine work among the sick. Being thoroughly versed in all his subjects, and having a most active mind and lively imagination, which readily felt the stimulus of large classes and a sympathetic audience, he was roused to efforts which this new field alone served to bring forth, and to show to himself and to others what latent powers he had.

In the sixth year of his professorship he published the first independent work he had written since the Philadelphia Practice of Midwifery. This was an octavo volume of 670 pages, and was published by Lea & Blanchard in 1847. Its title was, "Woman, Her Diseases and Remedies." It was written in the form of letters to medical students, and it is one of the most original medical works of this country. It is based very largely on the practical knowledge of women's diseases he had acquired by personal experience, during the thirty years he had now been actively engaged in business in this city.

I doubt whether there is any American medical work which so clearly shows the character of the author as this. The style is peculiar and original. It is easy, flowing, graceful, and often eloquent, and there runs through the whole book a vein of sentiment, a thread of morality, in the

form of appeals to the conscience and honor of the student, in his treatment of these diseases, which must strike every one who reads. There is in it a tone of easy familiarity with the subject, and with the reader, which is very agreeable. Its explanations are clear and distinct. The opinions expressed upon the nature and symptoms of the diseases referred to, and upon the methods of treatment, are full and positive. No man can doubt, as he reads, that the author has himself seen all that he has described, and that he has no doubts as to the propriety and correctness of the plans of treatment proposed.

In 1849 he issued the first edition of the work entitled, "Obstetrics, the Science and the Art," which was, in fact, a continuation of the Philadelphia Practice of Midwifery. This work, which was intended to be a treatise upon his special branch, contains a complete exposition of the anatomy and physiology of generation, a full description of pregnancy, and a full account of the process of childbirth in all its natural and preternatural aspects. It, like its predecessor, is eminently his own work. Though full of knowledge of all that had been done up to his time by domestic and foreign workers, by English, French, and Germans, and by the ancients as well as moderns, we see in it an amount of personal experience brought to bear upon any point of practice, which is seldom equalled. In the chapters on the physiology of generation he follows the best opinions of the day, but in discussing methods of treatment there is a constant reference to original observations, which demonstrates him to have been a man of great and most varied experience. The style here, as in the work on diseases of women, is quite original. He never hesitates to put a thing in his own way, is always ready, and often very attractive, in his descriptions of scenes witnessed by himself in the lying-in-room.

In 1850 he wrote a small work of 211 pages on certain diseases of children, and in 1854 a "Treatise on Acute and Chronic Diseases of the Neck of the Uterus." This was illustrated with 22 plates, colored and plain, and contained 116 pages. In 1854 he issued still another work, one on "Childbed Fevers." This last work contained 356 pages, and is written in the form of letters to his class. It is dedicated to his great friend, Dr. LaRoche, in writing to whom he refers to their "constant and loving friendship for more than twenty-five years."

In 1845 he translated a "Treatise on the Diseases and Special Hygiene of Females," by Colombat de L'Isère. This was a large, closely-printed octavo volume of 720 pages, and it, like the last work, was dedicated to Dr. LaRoche. A second edition was called for and issued in 1850.

Besides the preparation of the five original works I have just enumerated, he was obliged to revise several editions of his works. The first edition of the Letters on the Diseases of Women was published, as stated, in 1847. In 1850 a second edition, in 1854 a third, and in 1859 a fourth, were required, all of which were passed through the press under his own sole superintendence.

The work on Obstetrics, first published in 1849, passed into a second edition in 1852, a third in 1856, a fourth in 1863, and a fifth in 1867, and all this work was by himself alone.

In addition to these larger works he published some which, though of small size compared with treatises on any of the great branches of medicine, were large enough to require a good deal of time and thought in their preparation. In 1849 he printed, but did not publish, an essay of

sixty-eight pages on the sporadic cholera, addressed to Dr. Sam. George Morton. In 1851 he wrote, for the Academy of Natural Sciences, of Philadelphia, a memoir of Sam. George Morton, M.D., of forty-eight pages. In 1853 he read before this body a biographical notice, of thirty-eight pages, of Daniel Drake, M.D., of Cincinnati.

These various works, all of which were written in the midst of the most arduous and fatiguing obstetrical and general medical practice, and whilst he was in the habit of lecturing four times a week during the winter lecture courses, exhibit, I think, a remarkable example of what the vital centres of the human machine can occasionally accomplish—I say occasionally accomplish, for I am convinced there are few men born into this world who can do in the way of work what my father did during these years.

But all this labor began at last to tell upon even his elastic frame. His health began to give way—not that he had any special disease of any special organ—he began to wear out. He still carried on for some years his practice and his studies and writing, but it was evident to us at home that the work was fast ceasing to be a pleasure, and becoming a very wearisomeness to the flesh. Though when abroad he was still the attentive, painstaking, interested physician—though at his desk he still kept up his lively style of writing, and his constant habit of reading—we at home began to see a change. There crept over him a despondency in regard to his own health. He began to complain of great fatigue, then of constant weariness, and, towards the last of his active life, of unmitigated and immitigable wretchedness. I doubt whether there be many forms of human suffering more distressing than the nervous disturbances brought about by long-continued overuse of the vital centres, such as professional and business men, and women with large families and deficient incomes, have to experience. And when, in spite of this low health, the subject must, or will, persist in working the exhausted frame, there can be nothing but acute pain, or a blasted reputation, to give rise to equal misery. The contention with the wearied body, the fight against morbid, involuntary fancies, the almost constant expectation of death coming ere long in some ghastly shape, the broken sleep, the disgusted appetite—all these things, and much more, did I see in my father for several years before he yielded to the cumulative proof that he must yield.

About 1856, when he was sixty-four years of age, he began to make serious preparations for retirement from active life, and with this end in view bought, after looking at several different localities, a spot of land of thirty-seven acres, to which I had the pleasure of directing him, in Delaware County, eighteen miles from the city. He bought of Mr. Mark Pennel, who thus became his next neighbor, and who, a farmer by birth, was one of the best and truest men I have ever met. He became one of my father's greatest friends in his latter years, and I will not let this occasion pass, without saying that his kindness and attention did much to make my father's residence at his little country-seat agreeable and happy.

Directly after purchasing these acres, which were located on the top and slope of a fine hill, with more than three-fourths of the land covered with a luxuriant growth of noble woods, he set to work to build himself a house. The house was modelled on Downing's Northern Farm-house. It was built of hard, dark, gray stone, taken out of his own land.

And now, with this new interest aroused, with a mind and conscience satisfied that the time for a rightful rest was near at hand, he began

again to take some pleasure in life. How delightful were those days! He was forced to take half a day or a day, now and then, to see how his buildings progressed, and what pleasure to witness his interest and improving health under this new stimulus. His enthusiasm and poetry again woke up to activity, and he never tired of hearing and talking about this new comforter. His admiration of the site he had chosen, and of the building, as it rose upon the hitherto bare hill, it was delightful to hear. I recollect so well asking him once, upon his return to town after a short excursion to see the work done, "How does the house look?" "Look!" said he; "why, it looks like Windsor Castle." Asking him again, on another occasion, the same question, he replied: "Why, it looks like—like Chatsworth, by George!"

He built himself not only a house, but a barn and stable, a tenant-house, a spring-house, an ice-house, a work-shop, and all in the prettiest and most agreeable styles. And when all was finished, his houses and land had cost him but about fifteen or sixteen thousand dollars. He now sought a name for his new domain, and, amongst others, wished to call it Paraclete, the Comforter; but my mother objected to what might seem at least an impropriety in the use of so holy a word, and he chose the Indian name of a small river in Connecticut, hard by which his forefathers had settled, and he called it Hamanassett.

When all was ready he sent my mother, with such of his children as could go, and my children, to pass the summer at the place; and in the summer months he would go down himself, returning to town, at first daily or every other day, to attend to such cases as he could not well cast off. After one of these visits he walked down the hill from his house, towards the railroad station, to return to town. My mother accompanied him to the gate, which she held open as he passed through, miserable and sad at leaving her and his country home. As he passed through, he turned and said, sadly, "Mary, I feel now as Adam must have felt when he left the garden of Eden, and the angel standing at the gate."

His health, though improved, continued feeble. He kept, from the time he bought Hamanassett, a garden record, in which he chronicled all the important events of his life—the planting of flowers, of garden vegetables, of crops, notes upon horticulture, garden farming, and all the events of a most interesting country life. I found, on looking over this diary, the following passage, of the date of Saturday, November 28th, 1857, evidently written in town: "I am suffering dreadfully with a most distressing gastrodynia, which assails me in exhausting paroxysms of pain, with a sense of weakness that makes me almost faint. . . . I sometimes almost doubt whether I *can* hold out to the end of the course (of lectures). I fear paralysis, like James Dewees, etc. If I can win to March, I *will* flee away from the distress—for it is distress—and be at peace at Ham (Hamanassett)." Again, Wednesday, Feb. 17th, 1858, he writes: "This day, 66 years ago, was I born, at St. George's, Bermuda, on the 17th Feb., 1792. I am now old and well stricken in years, and yet I labor diligently in my calling! How long!"

Soon after this time he carried into effect a purpose he had often talked about. He held that men ought to retire from public appointments, whilst they were still somewhat fresh in health. He thought that when they retained such positions to a late period of life, they sometimes lost the power of judging of their own fitness for duty, and also that decision of character which was necessary to induce them to lay down volun-

tarily their high positions. He had a fear lest he might defer his own decision as to the proper time for retiring, until he should lose the power or will to decide. So, after the course of 1859–60, he sent in his resignation to the trustees of the Jefferson Medical College, against, I believe, the wishes of his colleagues. But he was firm in his purpose and his successor was elected. This gentleman, after accepting the position, unfortunately fell into ill health and could not fulfil its duties. Towards the fall of 1860 my father was asked to give one more course, which he accordingly did, though against his will or wishes. At the close of that course he again resigned. I shall read to the college an extract from the minutes of the faculty, showing the action taken by his colleagues in this, his final resignation. It was sent to him, with a very kind note, by his old and fast friend, Dr. Dunglison, then dean of the college. The minute reads as follows: "The Faculty of the Jefferson Medical College of Philadelphia receive with deep sorrow the intelligence of the contemplated resignation of their distinguished colleague and friend, Professor Meigs.

"For a long time he had expressed a desire to withdraw from the incessant labors of the most arduous branch of an arduous profession. Still the Faculty had indulged the hope that it might be practicable for him to persist in his successful career of instructing others, which has been a labor of love with him, and to be content with abandoning, gradually or wholly, the practice of his profession.

"He has decided otherwise, however, and sighs for retirement, away from the busy scenes to which he has been accustomed in civic life; and all must admit, that if any one be entitled to dignified leisure it is he.

"The Faculty will part with him with intense and enduring regret. Never could any one have more closely applied himself to the execution of the responsible duties that have devolved upon him, and when sickness and sorrow have afflicted him, he was never absent from the amphitheatre at his accustomed hour without feeling keenly the privation.

"That he may reap every anticipated advantage from the course he has laid down for himself for the future, and may long be preserved to the cherished circle to which his continued existence is so important, and to the world of science, is the fervent wish of his colleagues.

Signed, "ROBLEY DUNGLISON,
"Dean of the Faculty."

In his garden record I find him writing the following words under date of Monday, 25th February, 1861: "This afternoon I delivered my last lecture at the Jefferson Medical College, and shall never more appear in public as a teacher of obstetricy, though I am to go on Wednesday at 4 P.M. to deliver an address of farewell to the class. I am surprised that this *finale* of my public life causes in me not the slightest excitement; I am simply very glad to get out of it. I am not mad with joy, but I am serenely cheerful at the prospect now before me of enjoying a little of the *libre arbitre* that I never yet did know."

After this time he did but little more professional work. He retired by degrees from all regular business, but still saw from time to time some of his old patients, who were anxious to consult him, or strangers who had come from a distance to have his opinion. It was very easy for me to see that he was entirely weary of all medical responsibilities. He lost even his taste for medical literature, and rarely looked into a medical book. I suppose the faculties employed in the study and practice of medicine for so many years were worn out by the severe toil they had

undergone. In fact he had had too much of it, and even the recollection of the many anxieties he had passed through, and the excessive labor he had borne, made the past a painful retrospect. Certainly he had changed very much, for instead of enthusiasm there was disgust, and he turned gladly to literature for a rest, and for amusement and occupation.

I shall now give some account of his professional habits, then my own estimate of his character as a physician and medical writer and teacher, and finally read to you my son's description of his literary acquirements, and of the closing scenes of his life.

I have already begged the favorable consideration of the college for my, perhaps, too diffuse sketch of its departed member. Yet, I have found it impossible to say what I thought was due to his memory in fewer words, for he was a man of peculiar and original character, and one whose example in life may, I am sure, in most things, be fitly held up as a model for the future, whilst the lesson of his great success may serve to encourage others who shall have to begin life as he did, poor, unassisted, unknown, and with nothing but their own powers and high integrity to build upon.

Perhaps the most remarkable feature of his life was his wonderful activity. He was never idle. I never knew him to go to bed without a book in his hand. This is a literal fact. Unless ill, he always read after going to bed, no matter what the time of night might be. His manner of life for many years was the following: He had a large obstetric business and large general practice, neither of which were ever neglected. He was in the streets at work from nine in the morning until usually ten at night. In the middle of the day he had from half an hour to an hour for dinner, and in the evening, towards seven or eight o'clock, the same time for tea. His meals always taken in a hurry, and often interrupted by calls to the office, which, to the last, he would seldom refuse. Often up at night, often out all night, and snatching a few hours of sleep on a sofa or chair, for he rarely went to bed when attending a case of labor. When preparing his works for publication, it was very much his habit to take his manuscript with him when called to a case of labor, and to write busily in a neighboring room whilst the labor went on.

And yet, in spite of these great and continuous exertions, his mind was always active, bright and ready. He could sit down at any time, no matter how fatigued his body, and talk, write a letter, or work at any of his books, with an ease, rapidity, and relish which, to a man less gifted with such elastic vitality, may well seem astounding.

But not only did he possess and make use of this singular activity of the mental faculties. His moral sentiments and his emotional qualities were almost as remarkable. His temper was something to illustrate the profession to which he belonged. It was so sweet, so beneficent, so benevolent. Its patience was almost inexhaustible with the sick.

Dr. Wood says that Dr. Bache seemed unable to get angry. Though himself so absolutely upright, fair, and honest, even wrong-doing in another seemed unable to arouse anger in him. My father, on the contrary, though patient as a woman with the sick, could get very angry at times; vituperate in strong language what he condemned, and especially what he despised, but it was words, words. When the guilty came before him there was some under current of charity, of what Arthur Helps calls tolerance, some deep spring of tenderness towards weak humanity, which always led him to be gentle, considerate, forgiving. He hated to give

pain to others, he loved to do good, and many poor weak human hearts that had yielded to the temptation to do wrong, found in him a wise mentor who could point rigidly to the way in which they should walk, and yet lend them large forgiveness.

At home he could not always control before the members of his own family the expression of the weariness and bodily exhaustion which, in the last ten years of his active life, so beset him. But, even then, it was only the complainings which he made in seeking for sympathy; it was never ill-temper. Did any one seek his professional advice in the office, all this weariness and lassitude were forgotten as he stepped across the threshold of the room devoted to the sick, and he became the patient, devoted physician, whose whole duty was to discover the cause of disease and the remedy. I think the triumph of duty over the morbid state of the nerves, determined by exhaustion, is one of the greatest triumphs of human nature. The patience of the mother amidst the wearing toil of a large family of children, especially when for the want of money she has to bear the whole burthen herself; the patience of an actor, who leaves a home of poverty and distress to display his histrionic powers before the public; the patience of some poor literary man, who toils, like Hood, amidst poverty and pain and ill health, to do his duty and sustain himself and his own against the assaults of penury, are great exhibitions of the bright side of human character; but I doubt whether any of these are as much worn down as the obstetrician in full career. His labor of each day is more constant and more exhausting. His nights are more sleepless. His duty calls into play all the great faculties of the mind and heart. He must use his senses to make his diagnosis, and he must use them often with all the abstraction his nature is capable of. He must use his powers of memory, comparison, and judgment to determine methods of treatment. In preternatural labor he must perform the most delicate operations, which are not only delicate, but difficult; which require a great length of time often for their performance, and during which performance all the senses of the physician are kept upon the very rack of expectancy.

But not only are judgment and the perceptive powers called into operation and kept, at such moments, at the highest tension of which the operator is capable. The emotional faculties, which often predominate in a character, and crowd into disgraceful and ruinous flight, on great emergencies, the nobler powers of the intellect and will, are here exposed to a degree of stimulation and disturbance, which will tax all the strength of the volition and self-control to keep them in due subjection and discipline. The accoucheur not only knows by his intelligence that the lives of his two patients, the mother and her child, may, and often do, depend upon his judgment and action, but he has his great responsibility there in bodily presence before him. There lies the body of that wife and mother which has been intrusted to his care; with her fate is entwined that of her husband, and, if she has other children, they are appealing to the physician that he forget nothing of his responsibility. How can he look upon that frail and sacred body, that casket of motherhood, that sweet embodiment of all the most exquisite emotions of human nature, and know and feel that it is intrusted to his care, and not have his body worn by the pressure upon it of such thoughts!

And, yet, my father, in spite of his constant exposure to all these causes of exhaustion, retained to the last of his professional life an unsurpassed sweetness of temper, and a patience which seems to me, even now, almost

divine. Shall we not revere his memory for this, and hold him up as a model for those who are to follow him?

As a physician he was conspicuous by his devotion to his patients, his self-abnegation, his very high estimate of his responsibility to the sick, and his ever most conscientious discharge of every duty which could influence the progress of the case. These traits won for him from the public the greatest trust. Seeing him so deeply imbued with the importance of his work, and yet never hesitating to take prompt and decided action, because of his great confidence in his own judgment, the sick learned to confide in him with a fulness of faith and a sense of restfulness which, doubtless, had often much to do with their ultimate safety.

And then he was never mercenary. Born with a large æsthetic element in his nature, bred in the South, where he imbibed an unhealthy aversion to talking of money matters, hearing and seeing his father always exalting learning above money, he lived to be over fifty years of age before he seemed to awaken to the real value and uses of money. He could not face a verbal demand for his account without a kind of psychological tremor or nausea, and would creep or run away from it, if the patient would but let him. And if the asker, knowing this weakness of his, insisted, as sometimes he would, he never could screw his courage up to ask what he really deemed right, but would always choose for his standard some very low figure, which he was quite sure must seem moderate to the patient; for if there was one thing more odious to him than another, it was to have a patient whom he had benefited to even seem to think his charges exorbitant. Such an occurrence was gall and wormwood to him. When asked why he did not charge more according to his own estimate of the value of his services, his reply was, "He cannot pay me. My service was impayable. He ought to send me an honorarium." But besides this source of difficulty about charging, he was, as a habit, very careless, even reckless as to keeping any account of his daily visits. I knew him once not to enter a visit in his daily ledger for six weeks, and quite often he would make none for ten days. It was with him as I have heard it said it was with Dr. Chapman. But then Dr. Chapman had Mrs. Chapman, who was able to induce her husband to let her keep his books in some order. My mother, for a long time, assisted my father in the same manner, but finally he became so incorrigible that she had to give it up. The consequence of all this was, that when at last he did attempt to charge his visits, he had forgotten, I suspect, three-fourths. The occasion of this neglect was not altogether an æsthetic one. It was a bad habit, formed by his growing hatred to mere routine work or drudgery at home. Coming home tired and worn out, he could not resolve to set himself down to this mechanical work.

I cannot bring this sketch to a close without an attempt to show some of his opinions in regard to our common profession. His conception of what the physician ought to be, of the nature of his functions towards the sick, of his responsibility, of the breadth and depth of his work, were all of the highest order, and were so vigorously, eloquently, and forcibly pressed home upon the student, that I am sure no young man ever attended his courses without having his standard of what he should aim at elevated.

He always insisted upon a high standard of preparatory education. As early as 1829, in an oration delivered before the Philadelphia Medical Society, he said, "I shall state it as my opinion that a young man,

destined to the study of medicine, should begin by obtaining a knowledge of the Latin and Greek, the French, German, and Italian languages. If the requisition be deemed exorbitant by any one, I am sure he will not continue long so to regard it, after having fairly set about their acquisition, particularly the three latter." He, on the same occasion, advised that he should study history, geography, voyages and travels, the varieties of the human race, and the effects produced on him by the climate, soil, food, manners, and political institutions of various countries.

In an introductory lecture of November, 1846, he says, "I acknowledge that I am an enthusiastic admirer of my profession. My speech declares it, and my whole past life is a perpetual proof of it. But I love that profession as a ministry, not as a trade. Can any human avocation have a stronger tendency to elevate and purify the mind, than that of the physician? What other? In what light shall he see the nature of man so clearly and so plainly?

"If you compare the tendency of these pursuits to raise the mind and the heart above the common level of humanity, with the similar tendencies of mathematics or pure physics, or the study of moral science, we find that they alike lift the contemplation to the throne and glory of God; that they alike show forth the littleness, vileness, and fruitlessness of man, his scope and endeavor. The mathematician and the astronomer in their investigations of the theory of the universe, in their detection of the laws of planetary and stellar motions, and in the farthest reaches of their thought as to the great cosmic influences and reactions discovered by reason's glance, by the power of numbers, or the magic of their glasses, cannot come nearer to a view of the power and wisdom and goodness of the Most High, than we in our studies of the laws and phenomena of the *life force* and of mind."

He ever taught in his lectures not only the absolute duty of the student to be always a student, in order that he might personally command the use of all that the observation and experience of the world were constantly discovering in the way of remedies and cures, but he also ever taught that there was in medicine a moral element, which did not enter so deeply into any other human vocation except that of the preacher. He always held that there was in the practice of medicine what he sometimes called a missionary element, a high flavor of charity which no man could, and no good man would, desire to escape from.

At the risk of being wearisome, I must make a few more extracts from his published lectures, as it seems to be only fitting to put on record in this biography, for the information of the future fellows of this institution, which is to last, I hope, for many long years to come, something of what he thought and published of our science in the 19th century.

In November, 1843, he spoke the following words to one of the large classes of Jefferson Medical College: "Your station is one of the most confidential character. Men, and women too, will open to you the secret griefs and shames that oppress them. Where is honor if you betray them?

"You will be tempted to desert the path of duty under some pretence of doing good. Never do evil that good may come. Have a care lest you bring ruin on yourselves and discredit on all the brethren. The occasions to err are named legion. Be temperate, without reproach, charitable; charity is a grace to all men,—to the physician, indispensable.

"The rewards of labor are sure, if not large. The fees of the physician

are the honoraria—the honorable reward for intellectual labor. Take a just view of the nature and variety of this compensation. Values are determinate; you cannot be paid with a price; there is no tariff to be adjusted for health, nor an *ad valorem* for exemption from death. Hence, when, at a word and a glance, you save one from threatened dissolution, and he recognizes your service by a reward, it is the honorarium—the testimonial of his gratitude, not the measure of your service, for that is immeasurable. Now, when he presents you with a fee proportionate to his ability, you should accept it; an humble one from the poor, and a richer one from the rich. It is convenient and proper to have some rule as a general means of direction, and for the information of the people; but to measure all men by that rule is to be cruel as Procrustes. Must I say it? Yes, our profession is not in general the road to wealth; it is a sure one to competency. If it be riches you seek, make haste to seek them by some other action. . . . . No, your business in the world is one of charity. You must never turn a deaf ear to the cry of the poor. When you shall have become distinguished as practitioners, the poor will look upon you as well as the rich. A word! a kind word! oh, what a consolation to the distressed and humble poor from a rich and eminent physician! What a treasure of balm poured into the wounds of those who, alas! have few resources save in tears and silence!"

The preceding extracts will sufficiently show his views as to some of the most important ethics of the profession. I desire, also, to show forth one of his most distinctive traits—the peculiar regard he had for women, and especially the manner in which he referred to the sex in his daily teachings to his classes.

I think all will agree that it can be no easy matter so to deal with the subjects of obstetrical teaching, before a large class of young men, gathered from all parts of the country, as never, by word, phrase, or suggestion, to overstep the line of the purest modesty and delicacy; so to deal with all these delicate sexual matters, as ever to raise higher and higher the obedience of the classes to the highest law of manly devotion to the tenderer sex, ever to augment and to cause to glow with greater fervor these purest and best sentiments of the soul of man towards mother, sister, or wife. And yet my father did this with every class that listened to him, and the doing of it is one of the many acts of his life for which his memory ought to be honored and not forgotten.

In one of his introductory lectures, in referring to women, he says: "Every well-educated medical man ought to know something more of woman than is contained in the volumes of a medical library. Her history and literature, in all ages and countries, ought to be gathered together as the garlands with which to adorn his triumphant career as a physician; but these insignia of his power he can only gather by the careful and tasteful study of his subject among the rich stores of learning that are gained in the belles-lettres collections, whether archæological, mediæval, or modern. The medical man, surely, of all men, ought to be able to appreciate the influence of the sex in the social compact. But for the power of that influence, which of you would doubt the rapid relapse of society into the violence and chaos of the earliest barbarism?

"Are you not aware that the elegance and the polish of the Christian nations are due to the presence of the sex in society, not in the zenana? Do you not perceive that music, painting, poetry, and the arts of elegance, luxury, fashion (that potent spell), are of *her*, and through *her*, and in

*her?* Versailles and Marly and the Trianons had never been built for men. The loom blends and sets forth the dyes that add richer reflections to *her* bloom; the wheel flies for polishing the diamond that is to flash in impotent rivality before her eyes. Sea and land are ransacked of their treasures for her; and the very air yields its egrets, and marabouts, and paradise birds, that may add piquancy to her style, and grace to her gesture. Even literature and the sciences are in good measure due to her patronage and approbation, which is the motive power to all manly endeavor. This is true, since, but for her approving smile, and her rewarding caress, what is there should stir man from the sole, the dire, the unremitted compulsion to act that he may live? With woman for his companion, he acts not only that he may live, but that he may live like a Christian and like a gentleman."

Again he says: "The female is naturally religious. Hers is a pious mind. Her confiding mind leads her more readily than man to accept the proffered grace of the Gospel. If an undevout astronomer is mad, what shall we say of an irreligious woman? See how the temples of the Christian worship are filled with women. . . . . It is not until she comes beside him, in view of the people, that man ceases to be barbarous, and cruel, and ignorant.

"She spreads abroad the light of civilization and improvement as soon as she issues from the prison of the harem or zenana, to live with him in the parlor. Who made us human? Whose were the hands that led us to kneel down, and whose the lips that taught our infant voices the earliest invocations to Heaven?"

I have already adverted to some of his qualities as a lecturer. It is very eulogistic to say what I am about to say, and coming from me it may seem to be a mere filial over-estimate. I thought him, during the term of his activity in Jefferson Medical College, one of the very best and most admirable lecturers I had ever heard. And now, when I look back, since his death, at his lecture-room, and recall the power he exerted over his classes, and the memories of those days, I hold to my judgment.

If the estimate we are to put upon the value of a teacher is to be made from a consideration of what he effected, we must place him very high. When he first appeared upon the scene, I am quite sure that the classes of young men then coming to Philadelphia for medical learning, thought little of the importance and dignity of obstetrics, in comparison with the other practical branches, medicine and surgery. Many brought with them the old and vulgar prejudices that midwifery, as it was then usually called, was an old woman's kind of business, and that men should mingle with it only because they could not help themselves, and under a kind of protest. But my father soon changed this feeling, and made it one of the favorite branches of study in the college, and this, not only by demonstrating its great intrinsic importance to the public, but he raised it to a high dignity of its own by his constant portraitures of the tragic scenes through which the accoucheur had to wend his way; by showing the heavy and anxious personal responsibility of the obstetric practitioner, and by throwing around it an atmosphere of romance and tenderness towards the sex, which touched even the rudest student, and awakened in his heart an interest and respect for this branch of medicine, which he had never dreamed of, until its true tints were held up before him so bright and clear that he could not fail to see them.

I have never heard an oral medical teacher who could so cause to flash

before the mind of the student a true picture of the life scenes through which he was destined to pass—make him see, as it were, and prepare himself to act, in the crises and dangers and terrors of actual practice. When he described the attack of puerperal convulsions in some young and worshipped wife; when he placed before us a woman fainting, dying perhaps, of uterine hemorrhage, or when he painted in touching words what he called the hysteroids of childbed fever, there was no man who did not see the future that lay before him, for was not this an artist picturing for us what he had himself so often seen? And his power of vivid description made most welcome his minute and accurate explanations of the proper treatment to be pursued on all these occasions. And he could drive home upon his listeners a clear and lasting recollection of his plans of treatment, for he had a very distinct understanding of his own opinions; he had no hesitations, no doubts as to what ought to be done on all occasions demanding the interference of the accoucheur. He would state distinct and positive rules, thus and so, and then iterate and reiterate in varying language—strike one blow, then another, pause to make an illustration, and return to fasten and clinch all that he had previously said. He was never tedious, for he was full of his subject, knew all that had been learned in regard to it, and through his long and busy practical life, had himself seen, over and over again, everything nearly that could happen in the lying-in-room. He was enthusiastic as to its importance to society, as to its high dignity as a human calling, and with a fine poetic element which was specially his, threw over it, and around it, and twined into it, with every medical law he laid down, that halo of love and tenderness and pity for women, which is inherent in all men, is as old as the race, and is to last as long as the race is to last.

And now, gentlemen, having finished what I had to say of the medical part of my father's life, I shall let my son describe his literary acquirements, and portray his inner character as it appeared to those who dwelt with him by his own hearthstone. He shall also describe for us his latter days. He has done this with a tenderness and truthfulness which I could not equal, and so we will commit to the archives of the college this sketch of one of our departed fellows, whose life was surely one of busy endeavor in good works not often excelled.

My son writes as follows:—

Nothing was so peculiarly his as the varied learning he began with the first dawn of reason to acquire. It is not at all wonderful that fellows of colleges in England, or industrious Germans, who have set apart their lives to fathom all the lore of time, should become learned; but that a man upon whom, not learning, but a harassing profession, had the first claim, that he should reach such a height of erudition, is truly a sight rare to behold. The natural love of ease, that is common to all men, was well nigh extinguished in my grandfather, and the only ease he knew, was that which noble natures feel when they have spent their high parts for the furtherance of the right.

But that this may not be thought the idle vaunt of family affection, I will mention a few of the widely different books that gave him the greatest pleasure, and thus any one may see how fertile a mind was his, that could take in the excellences of each of these opposite works without prejudice or damage to the others. First, then, all who knew him will remember that the book he loved most dearly was a treatise on the races of men by the Count de Gobineau. In these learned volumes my grandfather

became wrapt up through and through, and saturated with the ever-flowing stream of their wisdom. As the years rolled on he never grew weary of the oft-told story of the first races of man, how they came from the hot marshes in the middle of Asia, and nourished themselves out of bone vessels which they scattered along the way, that generations to come might dig them up and unravel the story of their pre-historic hardships. And it was to him like the lifting of a curtain when he read how the simple-minded people, after unnumbered disasters, came at length to the Caucasus and went through the gates of Europe, where they spread themselves abroad and became slowly civilized by time, the great ameliorator of all things. My grandfather always put himself among the Aryan or noble race, and he liked to discover in his grandchildren the unmistakable marks of the Aryan outline as given by Gobineau. The prosperity of our country, and the rapid strides with which it has sprung up to greatness, were by him referred to the weight of Aryan blood in our veins; and, when our war was over and peace restored, his chief source of disgust was the backsliding which he foresaw from the terrible commingling of the nations.

He had such a delight in M. de Gobineau's writings that he began a correspondence with him when the Count was the French minister at Athens, and kept it up until the time of his death. And the last labor of his life was to translate a novel of his called "L'Abbaye de Typhaines."

A work that he read very much in his active life was the great treatise of Oken; he often trod wonderingly amid the luxuriant subtleties of German dialectics; and he was filled with awe and delight when he saw the jumps, antics, and drolleries that the human mind can perform when put to it.

Then it amused him greatly to read the quaint absurdities of the middle ages. He liked to hear about the wild ways of those boyish knights and jolly priests. Even the luxuriant folly and richness of iniquity that abounded in them gave him a sort of cold comfort, for he was a devout believer in the vanity of all things and the foolishness of this life. And, when he consulted those old landmarks and monuments of folly, he found that he was right. I think it was chiefly from Tallemant des Réaux that he drew those grotesque stories about the devil which he told in such an amusing way. Thus my grandfather, tired of the earth, and counting the days to his release, read these works and read them again, because he felt that the world was very evil; and this was a proof of it, showing him that his desire to be gone, and his disapproval of earthly things, were not in vain.

From Tallemant des Réaux he often went in an instant over the great gulf that lies between diabolical legends and Ritter's knowledge of the earth. He had very spiritual views about the power of evil, and no doubt he shared the common wonder of philosophers how a moral God can allow the existence of evil, but he was never so foolish as to dispute that it was so; for, with eyes as keen and fearful as the simple and pious who died hundreds of years ago, he saw the spirit of wrong in every bush, and discerned his marks in the child that was not yet weaned.

He was always thankful to any one who could tell him something about the dimly known kingdom of Persia, locked up in its barbarism by insuperable barriers of the elements. He loved to read about it because it was near the source whence issued the first stream of nations. I think he would have been sorry to see this labyrinthine web of Persia unwoven

so delicious to him was its slow disentanglement. In his meditations on the earth, as on all other things, he did not busy himself on the profound and unsearchable matters alone, but he took a child's delight in the pleasant tales current in Persia about the sweetness of their instruments of music, which rivalled Orpheus in giving a graceful motion to the cows and clumsy animals, and took away from the camels their thirst, satisfying them with music, instead of running water. The book from which he learned the most about Persia was, as usual, one of Gobineau's.

When all else failed him he used to go back confidently to a book that he must have known by heart many years before his death, a history of Gnosticism. This he liked, no doubt, for the same reason that he liked the legends of the knightly ages, because they gave him an insight into the corners and hiding-places of the mind, the loop-holes and crannies where it can get out. There is assuredly a sad consolation in hearing about the shoals and quicksands which the human reason has passed, and in counting the number of times that it has deviated from the true path; for it teaches us that, if we fall, it is no disgrace, since our wise ancestors have fallen before us.

There can be few men in active professions in this country now who can show a small part of the learning that was my grandfather's, for he was thoroughly well versed in all the great histories of the old and new writers—Livy and Sallust, Thucydides, Guicciardini, and Gibbon—he knew them all. The ways of science were not hidden from him. The scant shreds of mystery that have been picked up in Egypt, the dark and nonsensical beginnings of the Greeks, the dreary wilderness of the Arabians, and the copious fields of natural magic that abounded in the middle ages, the great revolution planned by Bacon, the discoveries wrought by Newton, and the further unveiling and prying into the secrets of nature that has gone on in our own time, all were open to him, and he saw the worth of each of them. He might almost take into his mouth Manfred's words:—

> "Philosophy and science, and the springs
> Of wonder, and the wisdom of the world,
> I have assayed."

He had crowded together a vast mass of knowledge, of which the disorder in his library was symbolical. This was a very paradise of confusion, and the spirit of disorder there ruled over all. Here were three bookcases, whose arrangement was like that of the night before the creation. There was an Italian Bible of the sixteenth century almost squeezed to death between two fat volumes of obstetrics; and of the complete works of Cicero there were generally two or three volumes on a piano stool for the children to sit on. The mantelpiece was in a yet more uncultivated state than the book-shelves. The centre-piece was commonly a tin canister of bunkidora tobacco, looming up from a waste of empty matchboxes, two or three half-finished busts of General Grant, and some scissors for pruning the trees, all of which had a tendency to be brought together by the lumps of bees-wax that were scattered about. From this disordered wild, lying on a cushion, which the dogs had almost torn to pieces, and with Humboldt's Cosmos staring him in the face, he was wont to declaim to his grandchildren upon the incalculable advantages of order, and the keen pleasure it gave him to see everything in its place.

The terrors and distresses of our war bore so heavily upon him that he began at this time to show that he was an old man, and to impress us

more with the sense of his age than he had ever done before. His grandchildren learned to keep themselves out of sight, lest they might be taken away from their sports, and sent to a neighboring house, or to meet the arrival of a train, that they might glean some bits of intelligence about the movements of the great army. And woe to him who was so thoughtless as to visit Hamanassett without a full budget of news; the more newspapers, the more welcome the guest, and the eager consultation of the war-columns often took precedence of the reception of the new comer. And, then, without reading a word, my grandfather used to throw them all down, and say they gave him such an agony of distress that he could not read them.

It is no wonder that any unusual noise should have troubled him, as he sat pensive and distressed upon his lonely hill. The hoarse screech of the locomotive was intolerable to him. So he made an agreement with the conductor of the train that, if any battle of disastrous end should be known in the city, he should give two whistles with his engine, but for a successful contest he should whistle twice as often.

Besides the sorrows that were given him by each defeat or loss of blood suffered by our arms, my grandfather went through a very sore affliction in the loss of a grandson,[1] who was his favorite and pride among all his descendants in the third generation. It was always an aim of my grandfather to advance the name of which he was the oldest bearer in the place where we live. And from his earliest childhood, high actions and noble exploits were looked for at the hands of this grandson. My grandfather, at least, thought himself endowed with a spirit of prophecy, for he expected his own death with no greater certitude than did he look for the prowess and renown of this grandson in after years. But alas! his prophetic utterances of the future were brought to nought, and his hopes dashed down by the last mournful event, even by the descent of the Angel of Death upon the lusty youth that he had so dearly loved. Fearless and bold from his boyhood, and taken away from his studies at the Military Academy of West Point, to fight in one of the most luckless engagements of our war, where he bore so brave a part that he received the thanks of several commanders of important posts, and had his gallant conduct cheered by the whole of his fellows in arms; this generous youth was struck down in an instant, and killed, by one of the partisans of the day. It was one of those dread events, full of mystery, that strike terror into the stoutest heart. This good young man, who knew not a sensation of fear, and from whom vicious actions and fraud were far off, was cut down in the twinkling of an eye. He was deprived of fame, and his shining qualities, and the precious jewels of learning with which he had adorned them, were buried in the earth. His country lost the profitable harvest that she might have reaped from his high parts, and his unoffending parents drooped beneath their heavy punishment.

When Goëthe heard of the great earthquake at Lisbon, where sixty thousand men were killed in sixty minutes, he lost the little trust in Providence that he ever had. But my grandfather's mind rose faithful still, and strong, above the dreadful sorrow; and I never could see that the death of his favorite in the least shook his belief in the benevolent government of the world. But a more terrible trial than this was preparing for him; the Angel of Death had not gone back to his abode

[1] Lieutenant John R. Meigs, son of General Montgomery C. Meigs.

among the spirits, but was fluttering about still, and waiting only to come again and afflict yet more grievously the gray, venerable state of my grandfather. His grandson had been seven months in the grave, and the keenness of his grief for him had begun to lose its edge, when my grandmother, having reached the allotted period of her life, was called to her long home.

She was not my grandfather's better half; she was his whole earthly existence, without whom he desired not to live. The world, that had long been imbittered to him, became irksome to him now, and he would gladly have left it. But this was not to be, and he stayed with us four years more, slowly pining away in grief both of soul and body. For at the end of his life he suffered untold distresses with a bodily infirmity that took away his peace when he was able to console himself for the loss of his sweet partner. Many a long year he had borne in silence an unceasing pain from some disorder in a bone of his leg. But as he was a man who shrank from any show of weakness or being disabled, it was his habit to tend this sore member alone, and he ever refused to show it to any one, though by consulting a learned physician he might have saved himself some measure of pain.

Rent by these two conflicting woes, he was the most amiable and the gentlest of men, and to the memory of his sons and daughters these days of misery are among the enjoyablest of his life, for in them he showed the beautiful contentedness of his spirit, and the stern self-denial with which he set his own mishaps aside.

Perhaps his stoutness in resisting, and his bravery, were wasted; perhaps he did not economize them as he ought, but let such noble qualities have their due, all honor let them have wherever they appear.

It is possible oftentimes for a mind free from taint to conquer the cries and lamentations of the body; for men, the more learned and the wiser they become, do acquire a certain contempt for the material parts of them, but the cries of the spirit cannot be set aside. The body may be crushed down and beaten, but the spirit "groaneth and travaileth in pain."

My grandfather, besides the bodily pain that he was ever suffering under, and the loss of the beloved wife who had never left him for fifty years, had to leave the shrubbery and fruit trees that he had used to tend, and he must come back to this uninviting town, whose hot red bricks and monotonous lanes he had long ago learned to hate, for he never thought of them but with the distressed women and dying children that he had known as their inmates. Cooped up in a second-story room, he pined for the peace and quietude of his pleasant home at Hamanassett. And each year he frightened his friends and neighbors by threatening to leave the ugly town, and find a little happiness in the fields alone.

Surely, sudden death is to the untutored soul a thing much to be dreaded. It is the prayer of the whole creation to be delivered from sudden death. Most of us would do all that we could to ward it off, and we should have an untranquil spirit if we knew that we were to be put out like a candle in the twinkling of an eye, without a moment of decay to warn us of the end. But to my grandfather the termination of his life was but "a quiet night and an end of his toils." There was only a little left of his mortal self; his flesh and bones were all out of joint, and he pined for dissolution. Without pretence, or making a parade of his fearlessness of death, he looked to it as a kind messenger that would relieve him of many a burden. He now redoubled his studies, and his mind was

never so young and so vigorous as when his body was fast wearing out. The earthly and the spiritual were in a divine warfare, and while his flesh ached and his bones were poured out like wax, his soul triumphed over them, sending forth the sparks from its unabated lustre. All of him that could die was now near its end, but the soul was laughing, and proud of its own strength, and he might have been with us now, had not the heavy chains of matter dragged him down.

At this time the consolations of philosophy, which he drank in with such zest, were chiefly studies upon the races of men, and the curious religions they had built up for themselves by their unaided reason ; systems which, though they be doomed to fall, do yet in a wonderful way set forth the glory of us, who are the highest work of creation ; he often busied himself, too, in studies upon the difference of races, and the results of their mixing with one another. Thus, by a beautiful inconsistency, while he was sinking beneath the weight of years, and the breath well nigh gone out of him, his greatest solace was to dwell upon the glories of the human race, and the excellence of the strength of which he was soon to have no more in this world.

But his state in his latter days was not altogether an unhappy one. He was full of misery, and rent with the shame which his proud nature could not but feel, when it saw itself prostrate and begging help from the children he had aided at their birth ; but, then, he had the comforting remembrance that he had not wasted the trust committed to him, and the enviable knowledge that rose up triumphant against his modesty, and told him that he had accomplished well his work on earth.

It is the habit of some good men steadfastly to contemplate their death at certain times; yet this, so far as we know, was never a part of my grandfather's daily life, though it is an ennobling exercise, tending to lift us above the poor things of the earth, and teaching us to perform with honor to ourselves, and profit to others, the last part we shall ever have to play in the world.

Therefore, my grandfather, though the contemplation of death was not an office which he went through daily according to rule, yet by no means neglected to look forward to his separation from the body with such devotion and awe, such humility and trustfulness as was becoming. And it is probable that he thought of it much oftener than those about him were aware of. When he felt more than commonly bowed down with pain, and when his grandchildren, who were his most frequent companions, were drawn off to something else, then no doubt he bent his thoughts on death.

He spent many hours of each day in meditation, and often passed sleepless nights, when the image of death must have been present to him, but he never came to any further conclusion than that he wanted to be taken away from this scene of vanity. Not once in his whole life did I ever know him to harbor a black thought about the world to come ; or, still worse, one of those terrible doubts whether there be any world to come.

It is often said that those about to die have a secret foreshadowing of their end; so none of us pass away all at once, but each one of us has a warning, more or less clear, of what is at hand. But, if my grandfather's outward signs and speech could be taken for indications of what passed within, no such foreknowledge was ever vouchsafed to him, except the constant wish that he had to die, and his state of being always ready for it. Two days before his death he had two of his sons from distant parts

of the country staying in his house, and he presided at the Sunday dinner with all his usual sprightliness and grace.

One bright morning in the summer, when all nature was full of life, he was found dead in his bed, having passed away quietly and apparently with so little knowledge of his approaching death that, up to the time when he went to sleep, he was employed about his common avocations; and there was a volume of Pythagoras on his shelf, with other works of philosophy. As it was his consolation to be gone, so was it ours that he went without pain. He died just as he had always wished to die, and passed peacefully away in the midst of a tranquil sleep on the 22d of June, 1869, at the age of 77 years.

Biographical notices of Drs. Benjamin Duffield and John Church, read by Dr. John Neill on the occasion of the presentation of their portraits to the College.

## BENJAMIN DUFFIELD, M.D.

Dr. Benjamin Duffield was born November 3d, 1753, at Benfield, the family seat, in the Manor of Moreland, Bucks County, Pennsylvania. His great-grandfather, who arrived in this country from England in 1682, had settled here, and the house remained in the family in a good state of preservation until 1837.

His father, Edward Duffield, was a man of scientific tastes, and was one of the early members of the Philosophical Society.

Professor Kinnersly, of the University of Pennsylvania, married his sister, and his associates were such men as Rittenhouse and Franklin, the latter of whom appointed him one of the executors of his will.

Dr Duffield was educated at the College of Philadelphia, where, in 1771, he received the degree of Master of Arts, and delivered on Commencement Day a poem entitled "Science."

He became a medical student in the office of Dr. John Redman, and after attending the lectures of Shippen, Morgan, and others, he completed his medical education at Edinburgh. Upon his return to this country he married Rebecca Potts, daughter of John Potts, of Pottsgrove.

His first public position was that of a surgeon in charge of a military hospital at Reading, Pa. After the war he settled in Philadelphia, and soon acquired a large practice in the lower part of the city. His familiarity with modern languages, which he obtained by residence on the continent, gained him the practice of a large number of foreign families, who at that time sought Philadelphia as a place of residence.

He was one of the early lecturers upon obstetrics, but no public announcement of his lectures has been found prior to the following announcement. "Dr. B. Duffield's Introduction to his Summer Course of Midwifery Lectures will be delivered this day at Mr. Charles Little's School House at 6 o'clock in the evening. April 6th, 1793." He had a large number of office students to whom he gave daily instruction.

In conjunction with Dr. Deveze, a French physician, he was appointed a physician to the Yellow Fever Hospital at Bush Hill in 1793, and was voted the sum of five hundred dollars by the Committee of Safety, in appreciation of his services.

He also held the appointment of physician to the Walnut Street Prison until the time of his death. And it is probable that holding these public positions his attention and study were directed to those subjects which he also elucidated in a course of lectures. The ticket reads, "Dr. B. Duffield's course of lectures on the diseases of hospitals, jails, etc.; with miscellaneous observations on the *American* practice of physic."

He was one of the original corporators of this College, and it is believed devised the seal and motto which it bears.

The first volume of Transactions ever published by the College contains an article from his pen. It is entitled, "A case of Inversion of the Uterus." Although he was a very ready writer and speaker, he left but few records. His style was probably better exhibited in a report published at the request of the Humane Society, a very respectable charity of those days.

In social life he was the centre of attraction. His hospitality was proverbial, and his genial humour was contagious. His house was the resort of wits and scholars, poets and divines. He was always ready at repartee, and gifted as an impromptu writer of verse. Some of his efforts appeared in print often without his name, and were attributed to others. The lines "On Commodore Barney's victory over General Monk," which attracted some attention at the time, were attributed for many years to a well-known author of this city.

He was a member of the American Philosophical Society, and a constant attendant at St. Peter's church.

He died in 1799, leaving two sons and three daughters. All of the latter married physicians, viz., Dr. John Church, Dr. Henry Neill, and Dr. John S. Martin, of Maryland.

## JOHN CHURCH, M.D.

Dr. John Church was born in Southwark in the year 1774. He was of Swedish descent, his great-grandfather died in this city in 1740, at 63 years of age, and although the family was a large one, as the records of the old Swede's church indicate, few or none remain bearing the name.

He studied medicine with Dr. Benjamin Duffield, and married Catharine, his eldest daughter.

He graduated in medicine in 1797, and presented an experimental thesis on "Camphor," which may be found in the published volumes of Theses.

He succeeded to a large practice upon the death of his father-in-law, and it was greatly increased by his own ability and popularity.

He was also appointed physician to the Walnut Street Prison in 1799. He continued Dr. Duffield's private course of instruction, and also his course upon Midwifery.

In 1802 his classes in Obstetrics became very large, and he associated with him in these courses Dr. James, in order that more practical advantages might be given to his pupils in attendance upon midwifery cases.

In 1797 he was elected one of the physicians to the Almshouse, and in 1803, with a view to still further extend the clinical advantages of his pupils, he proposed to the managers of the Almshouse that he and Dr. James should attend the lying-in ward on condition that they should be allowed to have one of their pupils present at each case of labour. The application was granted, and much valuable information was communicated in this responsible department of medicine.[1] In November, 1805, the managers, through the efforts of Drs. Church and James, conceded the privilege to deliver clinical lectures to a class of students in the "Green" and "Dead-house," during the winter. Dr. Church's lectures upon obstetrics at the Almshouse now attracted much attention, and, as at that time no course upon obstetrics was given at the University, he

[1] Carson's History of the Med. Dept. Univ. of Penna.

was induced to apply for permission to give his course in that institution. This was granted to him and his associate.

Besides being one of the Curators of the American Philosophical Society, he was an active participator in many of the societies and charities of the day.

He died at his residence in Second Street below South (afterwards occupied by the Southwark Bank), in 1809, in the midst of a large practice, one of the most successful lecturers of his day.

# SUMMARY OF THE TRANSACTIONS

OF THE

# COLLEGE OF PHYSICIANS OF PHILADELPHIA.

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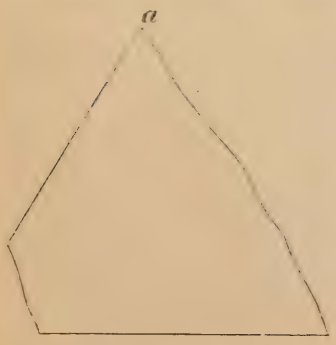
1873. *Jan.* 15. *A case of Foreign Body imbedded in the thigh four years and nine months.*—Dr. SAMUEL ASHHURST read the following report of a case of this :—

On the 22d of October, 1872, G. W., aged 25 years, of good previous health and habits, presented himself to my notice at the Episcopal Hospital with a small indolent ulcer immediately beneath Poupart's ligament of the left side, exactly in the fold of the groin, within three-quarters of an inch of the spine of the pubis. Its appearance gave the impression at once that it was caused by a foreign body, and upon introducing a probe it came in contact with what appeared to be a sharp edge of bone, which, upon further examination, could be felt distending the skin for nearly an inch below the ulcerated point. The patient stated that three weeks previously he had had a severe hemorrhage from the ulcer, and as the fragment seemed quite loose, in view of its proximity to the femoral vessels, I advised its immediate removal.

Wishing to consult with his friends he decided to defer any operation for a few days, and went out with some strips of adhesive plaster firmly applied over the part in the hope that, by confining the foreign body, further injury to the surrounding tissues would be prevented.

On the 24th of October he again presented himself, saying that he had been at work in the interim, and had been made much more comfortable by the straps—in fact he had been so much relieved by them that his friends strongly opposed any operative interference, and his coming into the house was in the face of their protest. He stated that four years previously he had cut himself severely over the tuberosity of the left ischium, and it seemed possible that the offending substance might be an exfoliation which had travelled from that region.




Ether was administered and an incision an inch and a quarter long was made through the skin, when immediately the cause of the trouble appeared projecting from the wound, it being the piece of glass herewith exhibited. (See figure.)

The four sides measured respectively half an inch, an inch and a quarter, an inch and a half, and an inch and three-quarters. The part marked (*a*)

presented, being pressed forward with considerable force by the muscles beneath, and some difficulty was experienced in removing it entire, it being very firmly held by the adductor magnus, for as I was entirely ignorant of the size and shape of the body, I disliked to use force. A safe delivery was, however, at last effected with the aid of some deep incisions, and search was made for other fragments but none were found. I then ascertained that the wound over the tuber ischii, of which he had spoken, was received on the night of January 4th, 1868, being caused by his falling through a sky-light while on duty as a fireman ; there had been profuse bleeding at the time of the accident, but the wound had been sewed up by the physician who attended him, who detected no foreign body, and the extraction of the bit of glass, after its interment of four years and nine months caused quite as much surprise to the patient as to any one. On October 29th he was discharged cured.

This case repeats the oft told story of the wonderful tolerance sometimes exercised by the human body of foreign substances imbedded within it ; it also, again, enforces the necessity of searching wounds for foreign matters when there is anything in the history of the case to make their presence at all likely, for it can hardly be questioned that our patient passed nearly five years in danger of serious injury from so large and sharp a substance. That he escaped any mishap can only be regarded in the light of a very fortunate occurrence.

Dr. Keating spoke of a case, recently under his observation, in which a needle was imbedded in the tissues of the hand, and asked how far surgeons were justified in examining wounds for such foreign substances.

Dr. John Ashhurst, Jr., thought that this depended upon the position and condition of the wound. In a recent wound, unless the presence of the needle is made manifest by an indurated line, or in some other way, the examination should be limited; if suppuration has been established, a more extended exploration may be made, for, even if the foreign body is not found, a free incision will be of benefit.

*Hypodermic use of Ergotin in the treatment of Uterine Fibroids and Hæmoptyses.*—Dr. Keating, in answer to some inquiries from various sources, communicated to the college his experience of the hypodermic administration of ergotin in submucous uterine fibroids as suggested by Prof. Hildebrand, of Königsberg. Although it might be premature, as yet, to speak of experiments which were not completed, yet there were certain results he had already obtained, which he deemed eminently useful and practical.

In one case of uterine submucous fibroid, after the sixteenth hypodermic injection, the uterine tumour had been reduced, by measurement, to one-third of its size, had been forced down upon the cervix uteri, and was evidently endeavouring to force itself through the os uteri. Dr. Keating was prepared to assist its spontaneous enucleation by making a slight opening in its investing membrane, which was tense and unyielding, but was forced to desist for the present from the impaired health of the patient, suffering from a complication of a serious anæmia consequent upon frequent and prolonged hemorrhage and an acute attack of the prevailing influenza. Superadded to this state of things was an annoying irritability of stomach and prostration, apparently to some degree the results of the constitutional effects of the ergotin.

In the above case, the sixteen hypodermic injections (of the following

strength: ergotin gr. xlv; glycerin, aq. destil., āā ℥cv. Syringeful, or about twenty drops administered each time) were injected consecutively within the space of eighteen days. They were all applied over the abdomen below the umbilicus. Their application was always attended with excessive pain, the patient suffering for near an hour after the injection. With all this intense irritation caused by the introduction of the drug and the proximity of the injections to each other, Dr. K. was astonished to find that only one seat of the injections showed the slightest tendency to inflammation or formation of an abscess, this one spot caused the patient great pain for several days, and from its hard aspect. diffused inflammation, and hardened base, gave her attendant great uneasiness. Upon careful examination it was discovered that this injection was decidedly the most superficial; bearing this in mind all the others were made as deep seated as possible, and although the same intense burning pain followed each application, in not one instance was there even a threatening of an abscess. In considering this point, naturally Dr. K. conceived the impression that the more deep seated the injection, and the more the cellular tissue was avoided, the less tendency there might be to subsequent inflammation and formation of an abscess as sequelæ of hypodermic injections. He would beg leave to make this digression while on this point, and state that his subsequent experience with hypodermic injections in other cases, and with other drugs, have led him to believe that there were ample grounds for confirming his views on that point, and he would suggest its application in cases where such complications threaten.

In the first hypodermic injection the pulse, which was 76, increased fifteen minutes after to 90. Respirations also increased about 4. On the second day the pulse was, before the injection, 73, thermometer 98½°. In each succeeding injection the pulse fell, as also the temperature, until finally at the fifteenth injection the pulse stood at 56, respiration about 12, and the temperature remained at 96°. Subsequent to the sixth hypodermic injection, at the expiration of ten minutes, a violent constriction would take place around the heart, lasting about two hours, very annoying and alarming to the patient; sounds of heart very weak, laboured action, continued coldness of the extremities, with numbness. At the end of the twelfth injection a well defined chill came on every day, inappetency and a nausea which finally became so excessive as to cause all food to be rejected and to reduce the patient, previously exhausted by anæmia and influenza, to such a degree, as to force the suspension of further treatment. During the administration of the ergot there was a constant pressure of the tumour on the sacral nerves and on the bladder, and the patient herself fully realized her diminution in size and the descent of the tumour. The nausea and irritability of the stomach continued for some days after the cessation of the employment of the hypodermics, and as the introduction of the finger in the tense cervix uteri would at any moment produce an increased irritability of the stomach, it became evident that some of the abnormal condition of the latter organ was due to the engorging and consequent pressure of a portion of the tumour within the os uteri, a view which was confirmed by the immediate relief consequent upon suppositories of opium and belladonna inserted in the rectum. Since the discontinuance of the treatment and relief of the catarrhal and anæmic condition of the patient, all internal symptoms have disappeared and she herself is anxious for a renewal of treatment. Within a week of

the discontinuance of the hypodermic, a menstrual period supervened with excessive hemorrhagia; two hypodermic injections were administered with the same proportions of ergotin, which seemed in a few hours to exercise a complete control over the flow.

Dr. K. could not hesitate in announcing a confirmation of Prof. Hildebrand's results in the above case. Notwithstanding the partial application of the treatment, the unfavourable circumstances in the broken-down condition of the patient when it was employed, he could but trust that in the reduction of the tumour, the control of the hemorrhage, and the remarkable tolerance of the drug under the circumstances, there were conditions which foreshadowed the most important and the happiest results from the new method of treatment in a class of cases which hitherto had been the opprobrium of gynæcologists. We are on the eve of deriving the most important results from the employment of a drug, the nature of which has been almost confined entirely to midwifery. Dr. K. had derived the most happy results from its employment in hæmoptysis, rarely having recourse to any other remedy in such cases than the hypodermic injection of ergotin. In two cases of vicarious hemorrhage of the lungs he had immediate relief from the use of the ergotin, and, combining with its employment the local action of the galvanic current, had succeeded in bringing on the natural menstruation; in one case after a suspension of four years, in another after one year of constant irregularities.

Dr. K. would take some other occasion of giving to the College his results from the hypodermic employment of ergotin, and also its internal use in cases of chronic engorgement of the os and cervix uteri, of hypertrophy, or from subinvolution of the uterus, and in cases of chronic flexions of the uterus of years' standing, where, with the employment of ergotin and local application of galvanism, he had effected perfect cures, enabling the patient to dispense with the use of pessaries, which at best are necessary evils.

In reply to a question of Dr. John Ashhurst, Jr., Dr. Keating stated that the needle was introduced at the border of the linea alba, and the point carried down to the muscular structures. In this way he was of the opinion, he avoided the tendency to inflammation which exists when the needle is merely passed into the cellular tissue.

Dr. John Ashhurst, Jr., spoke of the employment of hypodermic injections of ergotin in the treatment of aneurisms.

Dr. Samuel Ashhurst had used ergot in a case of purpura hemorrhagica; he thought the deep injections less liable to provoke inflammation on account of their being less exposed to injury.

*Feb.* 5. *Meteorology and Epidemics of Philadelphia.*—Dr. Wm. L. Wells read the following report:—

From the record of the temperature kept at the Pennsylvania Hospital, it appears that the average for the year was 54°.66, or about a degree higher than the mean for 48 years, the period during which meteorological observations have been regularly kept at that institution.

In 1872 the warm months were all warmer and the cold months all colder than usual. The most remarkable of these warm months were May 68°, 6 degrees above the average; June $4\frac{1}{2}$ above the average; July 82.3°, nearly 6 degrees above the average, and warmer than the warmest previously experienced in the last 48 years; and August 81.6°, $7\frac{1}{2}$ degrees above the average, and warmer not only than any previous

August, but also warmer than any July in any preceding year; it was however, a little more than half a degree below July, 1872.

As a consequence of this excessive heat of summer, we find an enormous increase in the fatality of those diseases which are more prevalent in hot weather, and above all, in cholera infantum. The total mortality from this cause was 1666; 837 more than in 1871, and 664 more than in 1870; which was, it may be remembered, a remarkably hot summer; hotter than any except that of last year alone. The mortality from cholera infantum in 1872 was 1080 in July; 324 in August; 143 in June; and 59 in September, the average temperature of this last month being 70°, $3\frac{1}{2}$ degrees above the average.

The deaths from sunstroke were 136, to 11 in 1871, and 52 in 1870. Of this unprecedented number, only 10 occurred in persons under 20; 28 died between 20 and 30; 32 between 30 and 40; 33 between 40 and 50; 10 between 50 and 60; 21 between 60 and 70; and only 2 over 70 years of age. There were, as is always the case, many more men than women; this excess being of course attributable to their being more exposed as a rule to the excessive heat by being obliged to walk or labour in the sun. The same reason is, no doubt, the cause of the greater mortality in adults as compared with the young.

The heat of our summer months very seldom causes any increase in the mortality of adults; but, in July of the past year, the mortality was very much increased even among adults, being nearly twice that of June, and greater than that of any other month, except January alone, when smallpox was at its height.

In 1872, there were reported 20,544 deaths; 2962 more than in 1864, which until last year showed a greater mortality than any previous year.

The great mortality of 1864 was caused chiefly by the deaths among soldiers, which amounted to 1598. In 1872, the excessive mortality was caused to a great extent by the epidemic of smallpox, but not by that alone, for although there were comparatively few deaths from some other *zymotic* diseases, more especially scarlatina, yet the deaths from other causes, not zymotic, were fully up to the average, and the deaths from diseases of the digestive system exceeded by nearly a thousand those of the preceding year.

In 1872, there were 3551 deaths more than in 1871, nearly 21 per cent. The mortality was one in 37, or 2.7 per cent of the population.

The total deaths under one year were 5862, of which 1221 were caused by cholera infantum alone, an unprecedented number. Marasmus caused 497; convulsions 462; smallpox 347; and pneumonia 267.

Among children between one and two years of age, most died in July, viz., 416; and next in August, 231. After this age the influence of cholera infantum is scarcely felt, for while 413 died of it between one and two only 32 died of it in the next three years. Smallpox caused 188 deaths between one and two years, coming next to cholera infantum; while under one year, smallpox came fourth in the list, as we have just seen; and from 2 to 20 it is first; between 2 and 5 years it caused 446 deaths, while croup (which next to it was the most fatal disease) caused 154 only. Diphtheria was most fatal between the ages of 1 and 5, causing 95 deaths, the total number from that cause being 150; between 5 and 10 smallpox caused 293 deaths, while croup (still next to it in fatality) only caused 44, and the total mortality was 782; between 10 and 15

smallpox caused 152 to 423 from all causes and between 15 and 20 it caused 195 to 685 for all causes. It will thus be seen that between the ages of 5 and 20 more than one-third of all the deaths were from smallpox alone, thus showing that it did not spare even those years of life which are usually most of all free from diseases.

Although it is thus seen that smallpox did not by any means spare the healthiest period of life, yet after the age of 20 we find for a few years a slight increase in the mortality from that disease; nothing, however, in comparison with the increased mortality from other causes. From being the most fatal disease, it steps into the second rank; phthisis passing above it, and retaining that position at all subsequent periods of life.

The deaths from phthisis between the ages of 20 and 30 (at which period this disease causes the greatest mortality) were more than one-third of the total mortality. The proportion which the deaths from phthisis bear to the total mortality were not much altered even by the presence of the great epidemic of the past year.

The total deaths between 20 and 30 were 2163; 733 for phthisis and 474 from smallpox. Then follows enteric fever which caused 97 deaths, this disease showing its full power at this period; pneumonia and disease of the heart come next, causing 79 and 64 deaths respectively.

Between 30 and 40 the deaths were 1892; in numbers a slight decrease, although relatively to the number alive at that period a slight increase over the preceding ten years. Next to phthisis and smallpox came pneumonia 93; disease of the heart 83, and enteric fever 60. This last disease after this diminishes in force, while the two preceding go on increasing.

Between 40 and 50 the total mortality was 1497; next to phthisis 355, and smallpox 144, came pneumonia and disease of the heart, each 86; then cancer 72. This last disease here first comes into prominence, as well as apoplexy and paralysis, which together produced 62 deaths.

Between 50 and 60 the total mortality was 1178; next to phthisis, 190, came pneumonia 89, and disease of the heart 84; apoplexy and paralysis together 81; and cancer 76. Smallpox only caused 65 deaths, falling to the sixth rank.

Between 60 and 70 the total mortality was 1139, very nearly the same as in the preceding 10 years, and of course far more proportionally to the number of persons alive at those periods of life. Phthisis caused 126 deaths. Apoplexy and paralysis together caused 119 deaths; pneumonia caused 81 deaths; disease of the heart 80, and cancer 63; smallpox only caused 35 deaths; 125 deaths are in this period ascribed to old age and debility, rather uncertain terms, which may be looked upon more as predisposing, than as direct, causes of death.

The total deaths between 70 and 80 were 991, a little less than half of those between 20 and 30, but when considered in reference to the proportion between those alive at 20, and those alive at 70, three times as many; 283 deaths are ascribed to old age and debility; 117 to apoplexy and paralysis; 57 to disease of the heart; 54 to phthisis; 51 to pneumonia; 35 to cancer; 17 to congestion of the brain, and only 7 to smallpox.

The total deaths between 80 and 90 were 530; 305 of them from old age and debility; 37 from apoplexy and paralysis; 32 from pneumonia; 15 from disease of the heart; 14 from phthisis, and 8 from cancer.

Of the 110 deaths over 90, 88 are ascribed to old age and debility.

We thus find succeeding each other as the most fatal diseases, cholera infantum from birth to the age of 2 years, smallpox from 2 to 20; phthisis from 20 to 70; and then apoplexy and paralysis as the most fatal diseases in the very old.

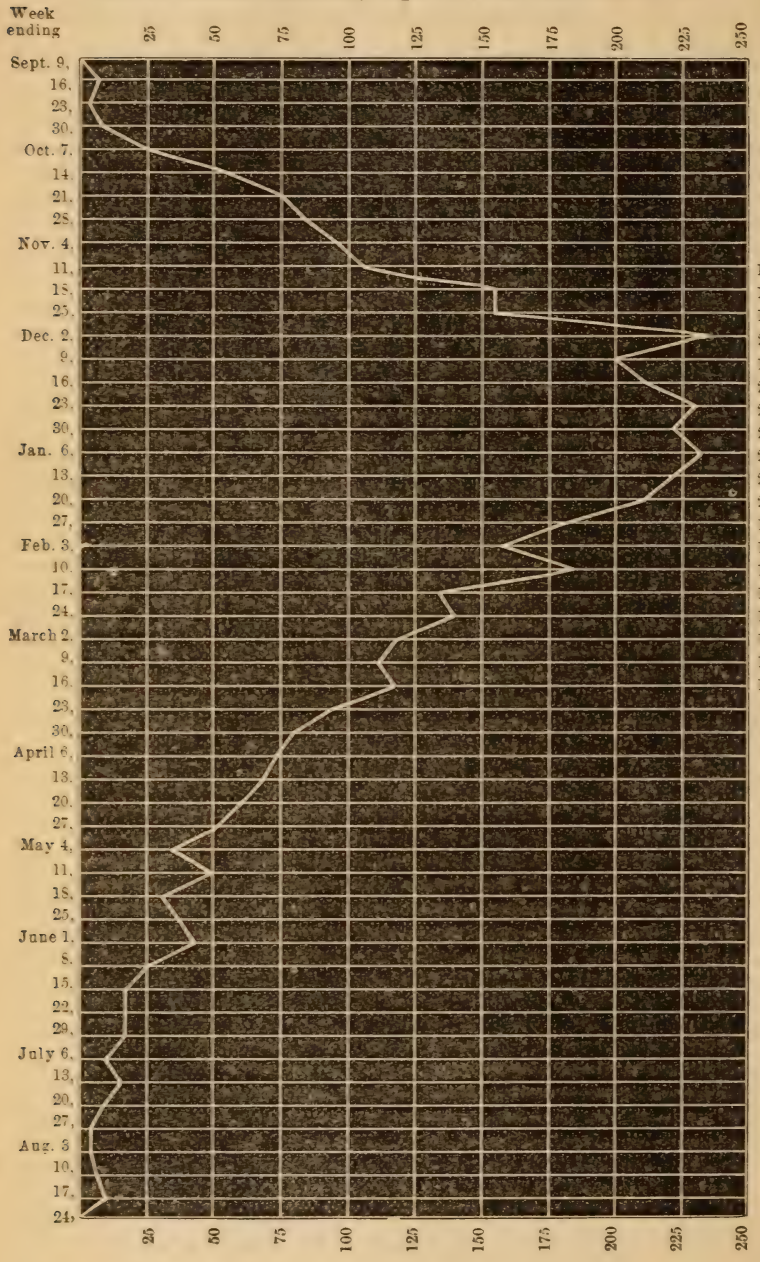
Of persons over 60 years of age the greatest number died in July, viz: 352; next in January, 294; then in May, 253. The least mortality was in November, 165. November was also the healthiest month in the very young, as only 217 children under one year died in it, or not much more than one-seventh of the mortality in July, and of children between 1 and 2 only 47 died in November, only a ninth of the deaths in July, viz: 416. The mortality of children under one year, although specially increased by very hot weather, is nevertheless, as is always seen, excessive at all seasons; while between one and two years, although the morbid susceptibility to heat continues to a certain extent, yet the mortality from other causes than cholera infantum is not much more than a fourth of that of children a year younger. The period of life between 5 and 20 remained remarkably healthy in spite of the epidemic of smallpox, and that part of this period which is between 10 and 15 was the most healthy of all periods of life.

In looking upon the late epidemic of smallpox as a whole, extending into two years, we may consider it as lasting just one year (from September, 1871, to August, 1872, both inclusive), for in the last week of August, of both 1871 and 1872, there were no deaths from that cause, and, although in all in the eight preceding months of 1871 there were 29, and in the four succeeding months of 1872, 18 deaths, yet these numbers are so small that I think we are justified in looking upon the epidemic as of just one year's duration; in which year we find the unprecedented number of 4417 deaths from smallpox alone. In comparing this with previous epidemics, we find not only the total number of deaths far greater, but that there were more deaths in each one of the four months from November, 1871, to February, 1872, both inclusive, than ever before in any one year. The epidemic of 1824, when the mortality was 330 in a population of about one-fifth the present population of this city, was represented in my last report as being nearly equal in severity to the epidemic of 1871. When, however, we compare it with the epidemic of 1872, it falls far behind it; and still more when we compare the entire periods of the two epidemics, for both of them extended over portions of two years. In 1823 there were 160 deaths, and in the whole epidemic of 1823–4, 490 deaths. This multiplied by five, for the purpose of comparison with the present increased population of Philadelphia, will not give so many deaths as in the one year 1872, and not much more than half the deaths in the whole epidemic which has just passed away.

When we look at the course which smallpox took during the whole period of its reign here, we find that it occupied only three months in attaining its maximum at the end of November. During December the number at first sank, and then rose again to 230, only 3 less than in the week ending the 2d of December, which was the week when the disease was at its height. From the 6th of January, 1872, when the number of deaths began decidedly to decrease, seven months passed away before smallpox, which took only three months to rise, had again fallen to only one death in a week.

The following diagram shows the progress of the mortality from smallpox in this epidemic visitation:—

*Diagram of Deaths per week from Smallpox in Philadelphia, for the* 12 *months beginning Sept.* 1871 *to Aug.* 24, 1872.



Although smallpox had such a definite course and has come thus completely to an end in Philadelphia, yet in many other places it lingers on; both in England, where it began as an epidemic more than six months before its beginning here, and also in this country, both north and south of Philadelphia, in Boston, Brooklyn, and Baltimore. On the continent of Europe it is reported as spreading into the north of Russia.

In Philadelphia, taking the total mortality from smallpox in the two years, 1871 and 1872, viz., 4464, we find that 556, or about one-eighth, were of children under one year. This, when compared with statistics taken in England, shows a rather small proportion of very young children here; for it was found that of 42,227 deaths from smallpox in England from 1856 to 1865, 10,223, or nearly one-fourth were under one year.

In reference to the protective power of vaccination, the only statistics which are available are those of the municipal or smallpox hospital; and these show its protective power, but observations taken on the largest scale in Europe are more conclusive than anything we have in this country, as for example in Bohemia, where in 21 successive years, observations were taken in the whole country, showing that of cases of smallpox contracted after vaccination only $5\frac{1}{16}$ per cent. died, while of the non-vaccinated $29\frac{4}{5}$ per cent. died. Also observations made in England on 50,000 children in the schools showing that of every thousand not vaccinated, 360 were scarred with smallpox marks, while of those vaccinated only 1.78 had such scars.

Cholera has not visited us (for we may overlook the 16 deaths in the past year, as insignificant in a population like ours), and it does not even present a more threatening appearance than at the close of 1871. It remains in Russia, attacking first one part of the country and then another, extending more or less from the north to the Black Sea, and oscillating more or less in its attacks. In St. Petersburg it was reported that one-fourth of the cases died.

A good deal of influenza and more cases of pneumonia than usual have been seen here in the autumn and winter.

An attack of influenza began among the horses of Philadelphia about the 27th of October, and proved universal. It was very serious and of a typhoid character, followed for some time by great debility and liability to pneumonia and dropsy, and attacking nearly all the horses almost simultaneously. A yellowish discharge from the nostrils usually accompanied it. It had attacked most large cities to the north of us before it came here; those to the south being attacked subsequently. Comparatively few cases proved fatal, unless overworked or exposed to cold.

*March* 19. *On the Hypodermic Use of Ergot or Ergotine in the Treatment of Uterine Fibroids.*—Dr. John Ashhurst, Jr., referred to the interesting remarks made by Dr. Keating at a previous meeting of the College (see page 131), upon the employment of ergot by the hypodermic method in cases of uterine fibroid, as recommended by Prof. Hildebrandt, of Königsberg (see *American Journal of the Medical Sciences*, October, 1872, p. 567), and gave some details of a case which had been thus treated at the Episcopal Hospital, and which, as far as a single case could, confirmed the deductions of those gentlemen as to the value of this mode of medication. Dr. Ashhurst's patient was suffering from a submucous fibroid tumour, developed in the anterior wall of the uterus,

and when she came under Dr. A.'s care was just recovering from an attack of peritonitis which had followed an unsuccessful attempt to remove the growth by means of an *écraseur*. The fluid extract of ergot (or ergotine, as it is sometimes called) was employed according to the following formula: ℞. Ext. ergotæ fluid. ʒiss; glycerinæ ʒj; aquæ fʒij. Of this preparation twenty minims, containing nearly seven minims of the fluid extract, were used at each injection, and the injections were, unless omitted from some special reason, made once daily. The point of injection was invariably in the sub-umbilical region, on one or other side of the linea alba, and care was taken, as recommended by Dr. Keating, that the nozzle of the syringe should be carried fairly down to the level of the muscular parietes. After sixteen injections had been administered, a vaginal examination was made, and it was found that, as nearly as could be estimated, the tumour had diminished in size by one-half. It was intended to wait for a week or ten days, and then to begin another course of injections, from which it was hoped that, at some future time, still further improvement could be reported.

Dr. Ashhurst remarked, as a matter of interest, that in his patient (unlike Dr. Keating's) no unpleasant constitutional symptoms whatever were produced by the hypodermic use of ergot; on the contrary, during the whole course of treatment, the patient daily gained in health and strength, and passed through a menstrual period (during which the treatment was of course suspended) without any undue loss of blood; and although when questioned she said that the use of the syringe was always followed by some hours of pain at the point of injection, yet the pain was never so great as to induce her to make any spontaneous complaint.

*On Iodoform as a Topical Application to Venereal Ulcers.*—Dr. John Ashhurst, Jr., also mentioned that he had been using iodoform lately, in a number of cases of chancroidal and of syphilitic disease, with very gratifying results. The preparations employed, beside the drug in powder, were those recommended by Dr. Izard, and by Dr. Damon, of Boston, viz., an ointment (℞. Iodoformi ℈iss; adipis ʒj), and a solution in glycerine and alcohol (℞. Iodoformi ℈iss; glycerinæ fʒvj; alcohol fʒij). The latter was preferred so long as the discharge from a venereal sore was profuse, the powdered drug being applied to the ulcers in their later stages, while the ointment was reserved for cases of unopened chancroidal bubo, and of unulcerated gummatous tumour. In the treatment of chancroids, Dr. Ashhurst had continued to make at the beginning one thorough cauterization with nitric acid, and in the treatment of syphilitic ulcers had of course not neglected to direct suitable constitutional treatment, at the same time that he had employed iodoform as a topical remedy. From the results which he had obtained, he was disposed to think that iodoform would prove a valuable addition to the surgeon's repertory in the treatment of all varieties of venereal ulcers. He did not think that iodoform, at least in its external applications, possessed any anti-syphilitic virtues; he regarded its action as entirely of a local character.

Dr. W. S. W. Ruschenberger stated that he had employed iodoform for the past three years both internally and externally, with the most satisfactory results. He had used it in phagedenic ulcerations and also in carbuncle. When applied in substance he thought it should be in a

state of very fine powder, otherwise it would, in some cases, provoke irritation. The ointment (iodoformi ℈j ; ol. theobromæ ℥ss) was a favourite preparation with him.

Dr. Edward Hartshorne inquired whether Dr. Ashhurst had observed, in the cases treated by him, any symptoms of iodism. Iodoform contains so much iodine (about nine-tenths) that it might be apt, when employed as freely as stated, to produce the constitutional effects which are sometimes noted in the use of iodine and of iodide of potassium.

Dr. Ashhurst said in reply that he had not observed constitutional effects in the cases under his care ; he added that he was somewhat sceptical on the subject of the absorption of medicines from suppurating surfaces, and mentioned that he was in the habit of dressing amputation wounds with pure laudanum, using it in large quantities and for a number of days consecutively, without the occurrence of any symptoms indicating constitutional implication ; he doubted whether, under such circumstances, any appreciable amount of the drug was absorbed,

Dr. Ruschenberger stated that he had administered iodoform internally in one-grain doses, and had not observed symptoms of iodism in any instance.

Dr. J. S. Parry had employed iodoform internally in cases of inherited syphilis, in children from three to twelve years of age, continuing its administration from one month to six weeks—in one case he administered the remedy for six months. In these cases he failed to observe any good results follow its use. In one case of nervous palpitation of the heart the patient was materially benefited by one-grain doses three times daily —symptoms of iodism did not occur in any case.

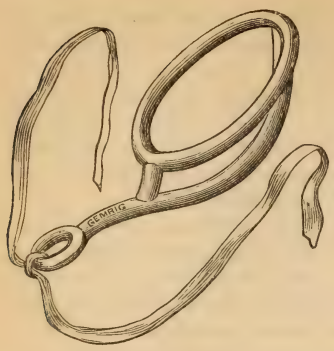
*Deep-seated Abscess in the Neck.*—Dr. Walter F. Atlee related a case of this which he had seen that afternoon in consultation. The patient, a young man of twenty-five, had had for some time a large circumscribed swelling on the left side of the neck, just below the angle of the jaw, which was supposed by his attending physician to be caused by a syphilitic tumour. Three days ago this rounded projection subsided, and at the same time the whole anterior portion of the neck became greatly enlarged, the skin covering it was evidently tightly stretched, and it was almost impossible to swallow even a little liquid.

Under the opinion that these symptoms were caused by the pressure of matter poured out from an encysted collection that had burst open, an incision was made through the skin and fascia, in the position chosen for ligation of the carotid artery. This gave outlet to a large quantity of a purulent liquid, less creamy and more gelatinous in appearance than ordinary pus. The difficulty of swallowing was at once relieved.

The case, in some respects, resembles those described by Dupuytren under the name of *phlegmon large du cou*, where an inflammatory abscess is seated deeply behind the sterno-mastoid muscles and cervical aponeurosis, and extends easily towards the head, and above all towards the chest.

*Nov.* 5. *Pessary for Procidentia Uteri.*—Dr. E. A. Spooner read the following description of a pessary designed to overcome extreme prolapsus and procidentia uteri. It may be made of metal or hard rubber, and is composed of—

1. An oval ring 3 or $3\frac{1}{4}$ inches in the long by $2\frac{1}{2}$ or $2\frac{3}{4}$ inches in the short diameter.



2. A bar of the same substance and thickness as the ring, attached to the posterior segment of the ring, so curved that with the ring in position it occupies the line of the vagina, about six inches in length, extending just beyond the vulva and terminating in a small ring half an inch in diameter.

3. A bar of the same substance and thickness attached to the anterior segment, so curved as to present a concave line anteriorly, $\frac{5}{8}$ to $\frac{3}{4}$ of an inch in length, meeting and attached to the vaginal bar at about 4 to $4\frac{1}{4}$ inches from its posterior extremity; the objects of the bars are to retain the oval ring in position and to afford space for the vaginal portion of the cervix to rest free from pressure. By adhering to the proportions above mentioned this is accomplished.

When in position the posterior segment occupies the posterior cul-de-sac of the vagina, the anterior segment supports the anterior vaginal wall and the uterus is retained in its proper position. The ring being small no distension of the vaginal tissue is caused, but on the contrary it is encouraged to regain its normal condition.

A strap or tape fastened to the ring at the extremity of the long bar and attached anteriorly and posteriorly to a band around the waist of the woman, must be applied for a few days, after which napkins may be worn for ten days or two weeks, when the instrument will be found to remain without fastening of any kind.

Case I.—Mrs. K., widow, sixty-three years of age, weighing one hundred and sixty-five pounds, had suffered procidentia uteri for two years. The tumour external to the vulva measured $3\frac{3}{4}$ inches by $2\frac{1}{2}$ inches. She had extensive laceration of the perineum. The uterus was returned, instrument introduced, tape attached for five days, subsequently napkins were worn two weeks, since which time, now *five* months, the pessary has remained, the uterus occupying the normal position.

Case II.—Mrs I., widow, forty-eight years of age, weight one hundred and fourteen pounds, had suffered procidentia for eighteen months. The tumor external to the vulva measured 2 inches by $1\frac{3}{4}$ inches; no laceration of the perineum. The uterus was returned, pessary introduced, tape applied five days, afterwards napkins were worn for two weeks, since which time, now four months, the displacement has been entirely overcome.

Case III.—Mrs. N., widow, æt 61; weight one hundred and twenty-three pounds; had suffered procidentia uteri for *six years;* the tumour external to the vulva measured 4 inches by $3\frac{1}{2}$ inches; perineal laceration extended to within half an inch of the anal sphincter. The uterus was returned, instrument introduced, tape applied for one day only, the patient consenting to remain in bed for the four or five days usually required for the strapping. Subsequently napkins were worn for a couple of weeks, since which time, now three months, the relief has been complete. In presenting this pessary to the profession, I should state that it was designed for the treatment of cases similar to those above cited. Possibly it may be used in cases of retroversion. It is an instrument by which

great leverage power can be exerted, as, by tightening the posterior strap, the posterior segment of the ring is pressed firmly into the posterior culde-sac, whereby retroversion might be corrected. Much care and judgment should be used in the employment of so powerful an instrument.

*December* 3. *Solid Galactocele.*—Dr. WALTER F. ATLEE presented a specimen of mammary tumour, called by Velpeau, in his work on *Diseases of the Mammary Gland, solid* or *concrete galactocele.* The chief interest in the case, Dr. A. said, was its very great rarity. Velpeau refers to but three cases, two of which he relates at length, and of the third, one of Dupuytren, he cannot be sure.

The tumour, which is the size of a child's fist, and has the consistence and appearance of rather hard putty, was removed from the external inferior part of the right breast of a woman twenty-eight years of age. Three years ago she first noticed the growth. Two and a half years ago she married; ten months afterwards she had a child, which she nursed about sixteen months. The lump increased gradually all the time, but most rapidly after the weaning of her child. The account given in Velpeau's work of these tumours renders it entirely unnecessary to say more as regards their diagnosis and symptoms and their constituents, but as their exact position in the tissues has not been accurately determined, it would be gratifying to have this specimen placed in the hands of persons competent to decide the matter. To the best of Dr. Atlee's knowledge the present tumour was a mass of caseine, surrounded by cellular tissue, and not contained in the natural ducts of the gland dilated, nor in a cyst of new formation.

The best account of these tumours is the one published by Forget in the *Bulletin Général de Thérapeutique Médicale et Chirurgicale,* 1844, and is entitled *Considérations Pratiques sur le Galactocèle ou Tumour Lacteuse du Sein.*

Dr. Atlee's specimen was referred for examination to a special committee, consisting of Drs. J G. RICHARDSON and John ASHHURST, Jr., which, at a subsequent meeting (Jan. 4, 1874), reported as follows:—

"The specimen consists of a single large sac filled with a curd-like mass of a grayish-white colour; there is no true cyst-wall, the parietes of the sac being composed of condensed connective tissue merely, while its curd-like contents appear to have been formed by the coagulation and gradual inspissation of effused milk. A careful microscopic examination of the specimen has been made by one of your committee, Dr. J. G. Richardson, who reports as follows:—

"'In making thin vertical sections of the apparent cyst-wall of the tumour presented by Dr. Atlee, I found that there was only a thickening of the connective tissue of the surrounding parts, without any development of a special membrane, such as is seen, for example, in certain atheromatous growths.

"'The whitish material forming the bulk of the tumour consisted of granular matter, broken-down epithelial cells, oil globules, and innumerable crystalloid particles, about $\frac{1}{1000}$ of an inch in length, and $\frac{1}{5000}$ to $\frac{1}{10,000}$ of an inch in width, which presented the appearance of imperfectly formed acicular crystals of fatty matter.

"'In order to determine their exact nature, about five grains of the putty-like mass were macerated with frequent agitation for two days, in a fluidrachm of ether, and, after the mixture became clear by standing,

a small portion of it was removed by means of a pipette, and allowed to fall drop by drop upon a glass slide. Under the microscope the residuum left by the evaporation of this ethereal solution was found to exhibit beautiful acicular and penniform crystals, often manifesting a tendency to stellate arrangement. Exposed to a temperature of 120° F. upon a 'warmable stage,' these crystals underwent fusion into a fluid of unmistakably fatty lustre, and, on removing the alcohol lamp from the apparatus and allowing the slide to cool, recrystallization in exquisite penniform crystals took place soon after the melting point of the material was regained.

"'The fact that part of this white substance was soluble in cold ether, from which it was deposited on evaporation of that menstruum in acicular crystals of fatty lustre, which melted at a temperature of about 120° F., proves that it contains that element of fat, formerly denominated margarine, but more recently shown by Heintz to be a compound of palmitine with stearine, and, perhaps, other oleaginous principles.

"'No traces of cholesterine could be detected, although carefully searched for in numerous specimens.'

"Your committee has, therefore, no hesitation in designating the specimen as a well-marked example of the rare form of tumour variously described by systematic writers as 'butyraceous' or 'butyroid tumour,' 'solid galactocele,' etc. The best accounts of this affection in the English language, with which your committee are familiar, are to be found in the translation of Velpeau's work on *Diseases of the Breast*, published by the Sydenham Society (London, 1856), and in Mr. Birkett's well-known treatise (London, 1850)."

1874. *January* 7. *Failure of Growth in the Nails after Fractures.*—Dr. Packard stated that he had recently seen two instances of this phenomenon, his attention having in both cases been called to it by the patients themselves. They were gentlemen of intelligence, of very careful personal habits, and noticed that they had not had to cut the nails on the injured members for five or six weeks; the exact time was not recorded, but the corresponding nails of the other side had required paring three times when the observation was made.

In one case, the injury was a severe compound fracture of the ring finger, and the stoppage of growth was noted in the nails of the thumb and all the fingers of that hand. In the other, it was a simple fracture of the leg. As union took place in each, the nails began to grow as usual.

Dr. Packard referred to the opinions of authors on this subject, and wished simply to put these facts on record.

*February* 4. *Plastic Operation for Extroversion of the Bladder and Epispadias; Death in thirteen hours.*—Dr. John Ashhurst, Jr., communicated to the College the details of a case of this nature which had recently occurred at the Episcopal Hospital. The patient was a lad of sixteen, upon whom Dr. Ashhurst had a year ago successfully operated by Wood's method, making, thereby, a broad and capacious hood to cover in the upper part of the exposed bladder. The deficiency in the abdominal wall was, however, in this case, more than ordinarily great, so that when the parts had healed after the first operation there was still a considerable gap remaining. It had been Dr. A.'s intention to subdivide the second stage of treatment, covering in the part of the

bladder which was still exposed at one sitting, and postponing interference with the epispadias until a subsequent occasion; but he had (unwisely, as the result of the case showed) yielded to the urgent desire of the patient and his parents, and attempted to accomplish all at one operation.

The proceeding adopted upon this occasion was essentially that of Richard, modelled upon Nélaton's operation for simple epispadias: a flap was first dissected up from the hood made at the first operation, and turned down over the portion of bladder which still protruded, being met at the sides by short and broad lateral flaps from the groins, all of these being reversed so that their cutaneous surface was turned inwards; reversed flaps were similarly taken from the sides of the penis and turned over the urethra; and the whole was then covered in with a broad saddle-shaped flap, taken from the scrotum, left attached at both ends, and slid over the head of the penis. The raw surface of the superimposed scrotal flap thus came in contact with the raw surfaces of the various reversed flaps, to which it was attached, as their edges were to each other, by sutures of delicate iron wire introduced by double needles, somewhat after the manner of the "tongue-and-groove suture" of Prof. Pancoast. The parts were then supported with broad adhesive strips and dressed with oiled lint, a Holt's winged catheter introduced through the newly-formed urethra, and the patient returned to bed.

The operation was necessarily a tedious one, requiring prolonged anæsthesia, and it is probable that the administration of ether was pushed rather further than was necessary; towards the end the patient twice became very faint, and was with some difficulty revived; indeed, at one period the possibility of death occurring on the table crossed the mind of the operator. However, reaction began fairly enough, and when Dr. A. left the patient he had rallied, was perfectly conscious, and appeared to be doing well in every respect; but the improvement was only temporary, and an hour or two later the pulse began to fail, the patient gradually sank in spite of free stimulation, and ultimately succumbed a little less than thirteen hours from the termination of the operation. No autopsy was obtained, but there can be little doubt that heart clots formed while the patient was on the table, and slowly increased in size until they led to the fatal termination.

Dr. Ashhurst said that he had now operated in three cases of extroversion of the bladder, one being the case of a little girl which he had reported to the College in 1871 (see number of this Journal for July, 1871, p. 70); one, that of a young woman, aged 21, in whose case there was, as an additional complication, long-standing procidentia of the uterus; and the third, that which formed the subject of the present communication. In the two first-mentioned cases the result had been quite satisfactory, and there was every reason to believe that it would have been equally so in the third, but for the unfortunate catastrophe which brought it to such an abrupt termination. The moral to be derived from this case was, Dr. A. thought, not that interference in cases of exstrophy of the bladder should be abandoned, but that the surgeon should resist all solicitations to undue haste, and should be content with accomplishing even but a little at each operation. Better to prolong the treatment over several years, if necessary, than to risk losing all in the attempt to gain too much.

Dr. Ashhurst, in concluding his remarks, submitted a table showing

the results of 38 cases in which operations had been performed of late years for extroverted bladder. Of the whole number, 30 were successful, 4 resulted in failure, and 4 terminated in death. In only two of the latter, however, could the fatal result be directly attributed to the operation.

*Table of Thirty-eight Cases of Plastic Operation for Exstrophy of the Bladder:—*

| Operator. | Whole No. Cases. | Successful. | Failures. | Died. |
|---|---|---|---|---|
| Richard | 1 | ... | ... | 1[1] |
| Pancoast | 1 | ... | ... | 1[2] |
| Ayres | 1 | 1 | ... | ... |
| Holmes | 5 | 3 | 2 | ... |
| Wood | 16[3] | 13[3] | 2 | 1[3] |
| Maury | 2 | 2 | ... | ... |
| Billroth | 1 | 1 | ... | ... |
| Big-low | 1 | 1 | ... | ... |
| Hodges | 1 | 1 | ... | ... |
| Ashhurst | 3 | 2 | ... | 1[4] |
| Lefort | 1 | 1 | ... | ... |
| Michel | 1 | 1 | ... | ... |
| Forbes | 1 | 1 | ... | ... |
| Ruggi | 2 | 2 | ... | ... |
| Barker | 1 | 1 | ... | ... |
| Aggregate | 38 | 30 | 4 | 4 |

*Esmarch's Apparatus for Bloodless Operations.*—Dr. W. W. KEEN presented Prof. Esmarch's apparatus for bloodless operation, which had been sent by Prof. E. to Dr. George A. Otis, of Washington, and by him kindly loaned for the purpose. It consisted of elastic webbing 6 yards long and 2½ inches wide, and black rubber tubing ½ inch wide (outside), and 3 feet long, with a hook at one end and 4 inches of chain at the other. For Comparison Dr. K. also presented the apparatus used by him in the case reported in the *Philadelphia Medical Times* for Dec. 27, 1873, and since then in another case with equal success. The bandage is of pure rubber instead of elastic webbing, and like the tube is of white rubber. The tube was 5 feet long, otherwise the two apparatuses were alike.

Dr. K. remarked that he considered the pure rubber bandage better than the elastic webbing, because it could be washed if soiled, was much cheaper, and the webbing soon lost its elasticity, as the rubber in it is always of an inferior quality.

He showed, also, a specimen of the varnished tissue paper used by Prof. E. to wrap around the limb, to keep his elastic bandage clean, and also as a substitute for oiled silk in dressings. He remarked that by its far greater transparency, equal firmness, and greater softness and flexibility, it seemed to be decidedly superior to the waxed paper now in use; and that it had suggested to him the possibility of using tissue paper coated with a solution of pure rubber in benzole, an experiment he was about to try, and he also suggested the possibility of using the same

[1] Died from peritonitis.

[2] Died from causes unconnected with the operation.

[3] Since this paper was read to the College, Mr Wood has reported two additional successful cases in the London *Lancet* for Feb. 7, 1874, p. 198.

[4] Died from secondary shock (heart clots?).

solution of rubber to replace the ordinary collodion in the treatment of wounds, etc., where exclusion of the air or elastic compression is desired.

Dr. Keen, in reply to a remark of Prof. Gross, disclaimed any desire to criticize or to enter into any controversy with so distinguished a man as Prof. G., especially as he had been his revered teacher of surgery; but it seemed to him that in two respects the new method differed from that which Prof. G. had taught so clearly for many years past. First, that the old method had not succeeded practically, and was never adopted even by those who had advocated it in their writings, much less, therefore, by others; and secondly, that while the old method *diminished* the amount of blood lost, it did not *totally prevent* this loss as Esmarch's method did. The consequence was that in the old method assistants were required to sponge away the blood, the parts were obscured by blood, often in large quantities, and by the constant sponging, and the patient lost blood often to a large amount; whereas by the new method the loss of blood was nothing (saving the few drachms lost while securing the small arteries which spurted after the operation was finished, and could only be seen by this means), the parts could be examined by preliminary incision, with no obscurity from the blood welling up, and the nature of the operation to be done determined upon with far greater clearness of diagnosis. If amputation or other operation were decided upon, it was done exactly as if on the cadaver on the dissecting table; minute dissections were rendered possible which constant bleeding and sponging would have seriously interfered with or prevented. Fewer assistants were required, two operations (*e. g.* for necrosis) could be done at once instead of at long intervals, since the patient lost no blood and suffered, therefore, far less shock; and, finally, instead of seeking out a favourable situation at which to apply the tourniquet, all places were indifferently good for the arrest of the bleeding by the rubber tubing.

At the close of the meeting the results were shown by bandaging the arms of two members, and applying the tubing. On the removal of the bandage the contrast of the normal arm and the bloodless and apparently lifeless arm was very striking.

*Report on Meteorology and Epidemics.*—Dr. Wm. L. Wells read the following report on meteorology and epidemics for 1873:—

From the record of the temperature kept at the Pennsylvania Hospital, Philadelphia, it appears that the average for the year 1873 was 53°.86 or seventeen-hundredths of a degree only above the mean for forty-nine years, the period during which meteorological observations have been regularly kept at that institution.

This near approach of the temperature to the general average was observable not only in the year as a whole, but in each separate month, with the exception of the last two. The first four months of the year were a little colder than usual; January and March the most so, being about two degrees below the average. The next six months of the year were a little warmer than usual, July the most so, being nearly three degrees above the average. But in the last two months of the year the variation was most considerable, November being over five degrees below, and December nearly four degrees above the average, thus bringing these two months to within a degree of each other in temperature, although the difference amounts usually to ten degrees, and in 1872 was over thirteen degrees

Although this difference was somewhat remarkable, yet neither November nor December varied as much from the average as is sometimes the case.

When we compare for a series of forty-nine years the variability in temperature of the different months, we find that it is much greater in the winter than in the rest of the year; for while in the four coldest months (December to March) the variability is from 17°.5 to 19°; in none of the other months does it reach 16°, and the warmest July in the last forty-nine years differs from the coldest by only ten and three-tenths degrees (10°.3). February is the month the average of which has varied most of all (from 23° to 42°), followed by March (from 30°.25 to 48°.7), while of the least variable months, next to July, which has only varied from 72° to 82°.3, comes June, which, when coldest, had a mean temperature of 65°, and when warmest, of 77°.21, thus showing a variation of 12°.21.

When we compare the mean temperature of one entire year with another we find a possible variation of nearly eight degrees, from 1836 when the mean temperature of the whole year was only 49°, to 1870, when the mean temperature of the year was 56°.83. The average of all the means is 53°.69, much nearer the highest than the lowest figure.

The rain-fall of 1873 amounted to 58¼ inches, about 12 inches more than the average, and only 2½ inches less than the greatest amount which has fallen in any one of the past 37 years. This excess was especially caused by the storms of August, in which month alone more than 12 inches of rain fell, over ⅓ of them in one period of 24 hours, including part of the eleventh and part of the twelfth days of the month. This storm was so violent that a great deal of damage was done in flooding cellars, bursting sewers, etc. The smallest amount of rain in any month in the year was in June, when only about nine-tenths of an inch fell, being as small an amount as ever before fell in that month in any of the past 37 years.

When we compare different years with each other, we find that the month which shows the greatest amount of variability in the amount of rain-fall is August, which has varied fifteen inches, or from less than a single inch to nearly sixteen. This is followed by the other two summer months, the variability of which is between ten and eleven inches, or from less than one to over eleven inches.

The least variable months as regards rain are the last three months of the year and March, each one of which varies from five to seven inches only, even when we compare the years in which there is the greatest difference. These four months also, together with May, are the only ones in which the total amount of rain-fall has never been less than one inch in amount in any of the past thirty-seven years. They are comparatively free, therefore, from danger of either flood or drought.

*Temperature of Philadelphia in* 1873, *compared with preceding years.*

| | Mean temp. of 1873. | Max. in 1873. | Min. in 1873. | Average of means for 49 years. | Warmest. | | Coldest. | Rain in 1873 in inches. |
|---|---|---|---|---|---|---|---|---|
| Jan. | 29°.68 | 59° | 2° | 31°.83 | 1858, | 39°.75 | 1857, 22°.25 | 6.048 |
| Feb. | 30.57 | 47 | 1 | 33.10 | 1834, | 42 | 1838, 23 | 5.607 |
| March, | 38.35 | 62 | 8 | 41.10 | 1871, | 48.70 | 1843, 30.25 | 2.242 |
| April, | 51.83 | 70.5 | 36.5 | 52.04 | 1871, | 58.15 | 1857, 45.25 | 4.191 |
| May, | 63.09 | 89 | 43 | 62.84 | 1826, | 72 | 1850, 57.75 | 4.783 |
| June, | 74.09 | 95 | 51 | 71.89 | 1870, | 77.21 | 1833, 65 | .887 |
| July, | 79.46 | 96.5 | 62 | 76.56 | 1872, | 82.30 | 1836, 72 | 5.553 |
| Aug. | 75.95 | 93 | 61 | 74.04 | 1872, | 81.64 | 1836, 66 | 12.289 |
| Sept. | 68.67 | 90.5 | 48 | 66.49 | 1865, | 72.5 | 1829, 60 | 4.045 |
| Oct. | 56.99 | 80 | 34.5 | 55.32 | 1835 & 61, | 60 | 1836, 47 | 5.889 |
| Nov. | 39.34 | 60 | 23 | 44.50 | 1849, | 51.5 | 1842, 38.5 | 4.995 |
| Dec. | 38.37 | 67.5 | 19.5 | 34.44 | 1848, | 43.25 | 1831, 25 | 1.757 |
| | 53.86 | | | 53.69 | 1870, | 56.83 | 1836, 49 | 58.286 |

In reporting upon epidemics in Philadelphia, in 1873, we first observe that the mortality in the past year, as will be seen by the appended tables, was far less than in the year before. This was caused chiefly by the absence of any great epidemic, such as that of smallpox, which raged with such fearful violence in the two preceding years, causing, in the year 1871, 1879 deaths, and in 1872, 2585 deaths. In 1873 it only caused 39. The diminished mortality was also in part caused by the diminished heat of summer, as compared with the previous year, when the summer was the hottest ever known in Philadelphia, and when, as a necessary result of this, there was an unparalleled number of deaths from cholera infantum.

The tables of mortality which are appended to this report have been compiled from those made out by Mr. Chambers, the chief clerk in charge of the statistics at the office of the Board of Health. The tables of the Board of Health are made out alphabetically, and in consequence of this, diseases which are similar, and which should be classified together, are in many instances placed very far apart, and it requires some trouble to arrange them in their proper places.

In many cases also (in consequence of the care and accuracy of the officials of the Board of Health in taking the names of diseases just as they are reported at the office by the physicians who have attended the cases of sickness), a single disease is mentioned in the table in two or more different places under different names; thus, for example, we find deaths reported from degeneration of liver, from fatty degeneration of liver, from cirrhosis, and from jaundice, whereas, the first and last named causes of death probably include many cases of the other named diseases.

In other cases again, the name is such as to render it doubtful as to what class the disease belongs, as, for example, hemorrhage from the lungs, which may of course be produced by a variety of causes. Some causes of death, again, are reported with sufficient clearness to admit of general classification, although the names are not definite enough for accurate knowledge of the character of the disease. Such are those reported as disease of brain, heart, kidneys, lungs, liver, etc., without any state-

ment of what the nature of the disease was. These are referred in classification to the different organs as local disease, although, of course, the cases may have been of a tuberculous or cancerous character.

Making allowance for this, however, and placing many of the diseases in the classes in which it is probable, although not certain, that most of the cases belong, it is, nevertheless, impossible to classify a good many of the causes of mortality, as they are reported with such indefinite names that the nature of the malady remains entirely uncertain. These, therefore, have been placed separately, without any attempt, by mere guesswork, to arrange them with the more defined causes of death; for example, the term, "compression of the brain," leaves it entirely uncertain whether the cause of the compression was a blow fracturing the skull, effusion in the brain membranes, or a tumour, and even in this latter case the tumour may be a bony growth from the inner table of the skull, or of any other description.

With these explanations I submit the accompanying tables, one showing the mortality of 1873 compared with the two preceding years, and the other showing the mortality in the different months of 1873 and at the various periods of life.[1]

[1] These tables are unavoidably omitted here. The most interesting point in them is that the mortality was 3808 less than in 1872, having fallen from 20,544 to 16,736; a decrease which is visible in almost every class of disease, even in cancer, which, although it had for several years shown a gradual increase, falls in 1873 to 268 from 316 in 1872. The chief exceptions to this decrease are: 1st, the various forms of typhus, which caused 277 deaths in 1873 and only 169 the year before; 2d, scarlatina, which increased from 174 to 319; 3d, disease of larynx; and 4th, the stillborn, which increased from 834 to 891.

# BIOGRAPHICAL MEMOIR

OF

# WILLIAM W. GERHARD, M.D.

Read before the College of Physicians of Philadelphia, May 6th, 1874, by THOMAS STEWARDSON, M.D.

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Dr. WILLIAM W. GERHARD was born in Philadelphia on the 23d of July, 1809. His great-grandfather, Frederick Gerhard, had emigrated to this country from Hesse Darmstadt in the year 1737, and settled in Berks County in this State. Educated by his parents in the tenets of the German Reformed Church, he in the year 1745 joined the Moravians, numbers of whom were settled in that part of Pennsylvania. From Berks County his son Conrad removed to Philadelphia, and here William Gerhard, the father of the doctor, was born in 1774. In the year 1808, he was married to Sarah Wood, of Salem County, New Jersey, who, like her husband, was educated in the Moravian Church, but was not of German descent, her ancestors on the mother's side belonging to the Gill family, who had emigrated from the north of Ireland. Their first child, the subject of this notice, was born, as above mentioned, in 1809.

From his earliest years, Dr. Gerhard appears to have possessed a remarkable love of books, as illustrative of which, the following anecdote has been communicated to me by a member of the family. One day he was missing at the dinner hour, and search was made for him through the house, but in vain. At last, some one went into an unoccupied room, where there was a closet filled with old books, and found him stretched out at length on the top shelf, absorbed in reading to such a degree, that he had heard nothing of the dinner bell or the repeated calls for him. I am also informed that he used to enjoy reading the works of Josephus at so early an age, that the large folio edition which he used had to be placed on a sofa, which served as a table, whilst he sat on a little chair in front.

In the year 1823 he went to Dickinson College, Carlisle, in this State, where he graduated in 1826. During his college life, he was noted as a laborious and industrious student. After completing his college course, he returned to Philadelphia, where he commenced the study of medicine under the direction of Dr. Joseph Parrish, and graduated at the University of Pennsylvania in the spring of 1831. The subject of his inaugural thesis was the endermic application of medicines, a subject to which attention had been recently directed by Lembert and Lesieur, of Paris. The materials for this essay had been collected by Dr. Gerhard in the Philadelphia Almshouse, to the service of which he had been attached as resident for

some time previous to his graduation. In this, his first essay, was foreshadowed his future career. Instead of general disquisition and loose assertion we have here the rigid analysis of a considerable body of facts, carefully observed and recorded. From this analysis is derived a cautious and discriminating estimate of the amount and kind of influence produced upon the general system by various remedies when applied to blistered surfaces. The value of this essay, in which the experiments of Lembert were repeated and confirmed, was at once acknowledged, and the attention of the profession in this country attracted to a subject of great practical importance.

After taking his medical degree, Dr. Gerhard still continued to devote his time to the observation of disease in the Philadelphia Hospital, and in the spring of 1831 repaired to Paris, in order to take advantage of the extensive facilities there offered for the pursuit of his profession.

At that time Broussais was still living, and occupied the chair of general pathology and therapeutics in the faculty of medicine, but he was lecturing to almost empty benches. It was sad to see the man whose genius had so largely influenced medical opinion and practice, whose enthusiasm and impassioned address had but a few years before attracted crowds of attendants, now condemned when he entered the lecture-room to see the benches vacated, and again, towards the close of his lecture, reoccupied by those who came to listen to the gentleman who was to succeed him. Nor was this the result of any failure in mental or bodily energy, as is abundantly proved by the fact, that a few years afterwards he again for a short time attracted immense crowds, when a fresh field was opened to him for the exercise of his wonted powers. But in the field of general medical pathology, he met with no responsive enthusiasm among his audience, who no longer felt an interest in the exposition of his views upon an exclusive system of doctrine, which at last entirely dominated his mind; a doctrine which was a pure conception of his intellect, based upon *a priori* reasoning, and incapable of demonstration. Nevertheless, Broussais had largely contributed to the formation of the then existing state of the medical mind. Fully appreciating the important bearing which the discoveries of his contemporary Bichat must have in the domain of pathology, he laid great stress upon the study of local lesions and the just interpretation of symptoms as associated with them. By his impassioned address, his sarcasm and invective, he gave force to his aggressive onslaught upon the doctrines of the day, aroused the medical mind, and opened fresh channels of thought. To this warfare, he brought, not so much great erudition, as the force of original genius, operating upon materials which he had accumulated during many years of active devotion to the sick in army hospitals, both in Germany and Spain, during the wars of Napoleon. The result was that the medical men of Paris, at the period of which we are speaking, whilst they felt obliged to discard the exclusive system of doctrine which he maintained, perceived, nevertheless, that for the determination of the questions which had been raised, it was necessary to institute a fresh and impartial examination of facts. Hence had arisen, at the period when Dr. Gerhard resorted to the Paris schools, a number of careful and conscientious observers, who in the Paris Hospitals were devoted to the most careful observation of disease at the bedside, as well as its results in the dissecting-room; content in this way to determine such points as could be rigidly deduced from slowly accumulated facts, without attempting to launch out into general hypotheses. Among the men who were most prominent in this movement in the deparment of pure medicine,

were Chomel, Andral, and Louis. To the teachings of these men, particularly the latter, Dr. Gerhard especially devoted himself; teachings, to which the practical tendencies of his own mind gave a ready and cordial response. The lessons to which he particularly listened were clinical, to the exclusion of general lectures. Indeed, he spent a number of hours daily in the hospitals, training himself to the observation of disease, under the direction of the most able guides. But besides listening to the instruction of others, he laboured assiduously in collecting materials by which he might himself benefit science. The first-fruits of this labour was the publication, in conjunction with Dr. Pennock, of observations upon the Asiatic cholera as it appeared in Paris in 1832. After the disappearance of this terrible epidemic, he confined himself almost exclusively to the hospital for sick children, which contained upwards of 500 beds, the patients ranging from two to sixteen years of age. Here he accumulated material for a series of interesting papers, the publication of which was commenced whilst still residing in Paris, but not completed till some time after his return. The first of these essays contains a most minute description of a number of fatal cases of smallpox, which afforded him an opportunity of studying its morbid anatomy, to which subject he was ever especially devoted. The morbid anatomy of the diseases of childhood had at this time been less extensively explored than that of adults, and hence afforded a richer field for investigation. Thus he found that inflammation of the glands of Peyer, which at this time was the subject of much discussion as the peculiar lesion of typhoid fever, occasionally existed in children in association with affections of an entirely different character.

Another of these essays was on the cerebral affections of children; and here, in his preliminary remarks, he insists upon the importance of ridding the mind, as much as possible, of preconceived opinions. Such was his desire for impartial observation, that he not only avoided, as he tells us, the examination of books, but even abstained from the comparison of his own observations with each other, until the series was completed, and he was prepared to analyze them, and then compare the results with what had been related by others. I mention the above to show his great caution in arriving at conclusions, and his conscientious endeavour to search after truth. But I will not weary you by going over familiar ground, and noticing in detail his views upon the proper method of study in medicine, which were, in fact, those of M. Louis.

As a result of careful observation and analysis of all the cases of cerebral affection, in both the boys' and girls' wards of the Children's Hospital, which occurred during a certain period, he succeeded in establishing the connection between one form, and that by far the most common one, of the meningitis of children, and the deposit of tuberculous matter in the pia mater. This disease has been since known as tuberculous meningitis, and includes a large proportion of the cases previously described under the general term of hydrocephalus. It may not be amiss here to observe, that, whilst establishing the fact of the tuberculous character of the disease, he leaves it an open question whether the tuberculous deposit was the cause or the consequence of the meningeal inflammation.

The last of his essays, based upon his observations at the Children's Hospital in Paris, was that upon the pneumonia of children. In this essay he contributed largely towards establishing the distinctive characters of this disease as compared with that of adults. He describes with great

accuracy the post-mortem appearances, so different from those in adults; its symptoms, course, etc.; and shows, conclusively, how widely it differs in many important features from the pneumonia of later life. This is now so well recognized that the affection continues to be known as lobular pneumonia.

In the fall of 1833 he returned to Philadelphia; and such was his ardour in the pursuit of his favourite studies that, instead of entering upon the practice of his profession, he applied for the position of resident-physician at the Pennsylvania Hospital, to which he was elected in the spring of 1834

Having studied with great care the typhoid fever of Paris, he was anxious to determine, what was then a matter of much interest, whether the typhoid fever of our own country presented the same anatomical characteristics, which had been so clearly determined by M. Louis as belonging to the former. Accordingly, after carefully studying the cases of fever presented to his notice in the Pennsylvania Hospital, he published the results; clearly establishing the fact that our common continued fever was identical with that which prevailed in Paris, both in symptoms and post-mortem appearances. At the same time he pointed out the absence, in our remittent fevers, of the peculiar anatomical characteristic of typhoid fever, viz., disease of the glands of Peyer. During the next two years, viz., 1835 and 1836, he published a number of papers, containing reports of cases, with the results of his observations on various diseases, particularly in reference to their morbid anatomy. He also published at this time a short essay on the importance of clinical instruction, to the establishment of which, in this country, as a regular branch of medical education, he devoted much of his time and energy. I should mention that this, as well as all the essays previously noticed, was published in the *American Journal of the Medical Sciences*, so long and ably edited in this city by Dr. Hays. In this year, also, he published in a small octavo volume a treatise on the diagnosis of diseases of the chest, a subject to which he had devoted especial attention; having in Paris rendered himself perfectly familiar with auscultation and physical exploration, which, at the time of his return to Philadelphia, was but just beginning to command the attention of the profession generally, although Prof. Samuel Jackson had for some years previously urged it upon their notice. To facilitate the study of the physical signs was the principal object of this treatise, by presenting to the American public a condensed view of what was then known in reference to the physical exploration of the chest, including what he had gathered in the Parisian hospitals, as well as some original matter.

His next, and, perhaps, the most important paper which has proceeded from his pen, was on the typhus fever which prevailed in Philadelphia in the spring and summer of 1836. To understand the value of this paper, at that time, it must be recollected that the diagnosis of fevers, and especially the continued fevers, was not then determined with the precision which at present obtains. At that time, indeed, typhoid fever, as described by Louis and Chomel, was the only one whose history had been given with the precision and completeness which the advanced science of the day required. The ordinary typhus of Great Britain and Ireland did not, in the majority of cases, present the peculiar anatomical lesions of typhoid fever as described by Louis; and, when they were found, the affection was regarded by most English physicians at that time, as a mere modification

or complication of their ordinary typhus. This typhus Dr. Gerhard had had an opportunity of observing, for a short time, on a visit to Edinburgh. Under these circumstances it was very gratifying to him to be able to observe an epidemic of fever which appeared identical with English typhus, and that in so large a number as two hundred cases. Having by previous observations, corroborated by those of others, particularly Dr. Jackson of Boston, satisfied himself of the identity of our ordinary continued fever with the typhoid fever of Paris, he now felt warranted in announcing that the present epidemic was no mere modification of it, but a distinct disease; distinct not merely in the absence of the anatomical lesions of typhoid fever, but by presenting positive features, in its symptoms and other points of its history, which clearly entitled it to take rank as a distinct disease. We see clearly then that this paper did much towards the settlement of a then very interesting and much agitated question.

In this same paper, also, he informs us that further observations had confirmed what he had previously announced in reference to remittent fever, viz., that in this affection the glands of Peyer were not the subject of any lesion; and at the same time expresses the belief that the anatomical characters of remittent fever are to be looked for in the spleen, liver, and stomach. The epidemic of typhus fever above mentioned persisted with more or less severity for several years, as we learn from a report, in the first number of the *Medical Examiner*, of a clinical lecture delivered at the Blockley Hospital in December, 1837. In this lecture Dr Gerhard alludes to the fact that his account of the disease had been admitted by English and Irish physicians, particularly Dr. Graves, of Dublin, as accurately descriptive of the disease as it occurs in England and Ireland. This admission shows the wide applicability of the conclusions arrived at by Dr. Gerhard, and their important bearing on the settlement of the general question of the essential distinction between typhus and typhoid fevers.

The publication of the *Medical Examiner*, in which the above lecture was reported, was commenced in January, 1838, Dr. Gerhard being one of its editors; and here, for a number of years, were reported his clinical lectures, as well as those of other gentlemen connected with the Philadelphia and Pennsylvania Hospitals. In this year, also, Dr. Gerhard was appointed assistant to Dr. Jackson in the University of Pennsylvania, for the purpose of relieving the latter in his duties as clinical lecturer at the Philadelphia Hospital. From this time forth, most of Dr. Gerhard's contributions to science appeared in the form of reports of his clinical lectures, which afforded him an opportunity of presenting, from time to time, additional evidence of the correctness of his views upon points already alluded to, as well as of promulgating whatever facts might present themselves to his notice, bearing upon topics of interest. In fact, for the remainder of his life, his time was principally occupied in private practice and clinical instruction. As a clinical teacher, he was remarkably successful, and exerted a powerful and commanding influence. Without any pretension to eloquence, he nevertheless riveted the attention of his hearers, and stimulated their enthusiasm. Himself deeply interested in his subject, he communicated this interest to his audience, by the sheer force of truth. Students saw that truth was his object, not display; the advancement of science, and not the gratification of personal feelings, whether of vanity or ambition; in short, that in his mind, a deep interest in his subject, and a thorough conscientiousness in the pursuit of it, were the over-mastering

motives. In an easy and conversational style, he presented to his hearers a graphic portraiture of the case before them, bringing into relief its most important symptoms; impressing upon their minds the most striking features in its history; pointing out, by a few clear and practical expressions, the bearing of any particular fact upon interesting medical questions, but avoiding long and laboured arguments, or general disquisitions upon the nature of diseased action. He neither stimulated the fancy by the flowers of rhetoric, nor amused the intellect with episodes upon theoretical questions, but confined himself to drawing such practical conclusions as were clearly deducible from the facts presented. No man of his day enjoyed so high a reputation as a clinical teacher, and not only did he succeed in an eminent degree in arousing the enthusiasm of students and putting them in sympathy with himself, by infusing into them his own ardour in his favourite study; but he produced an influence upon the profession here, which is felt still, which has fostered the establishment of clinical teaching among us, and done much to give it that rank which it now occupies here as a branch of medical instruction. So highly were his services appreciated by his pupils that, in the spring of 1840, a portion of the medical class of the University of Pennsylvania, who had attended his lectures at the Philadelphia Hospital, presented to him a series of resolutions adopted at a meeting held for the purpose, in which, after expressing their high estimate of the value of clinical instruction, they compliment the Doctor upon his eminent qualifications for imparting such instruction, and particularly upon his truly scientific and practical manner of elucidating disease. They conclude by expressing their sense of "his unequalled skill in illustrating the diseases of the thoracic organs." Doctor Gerhard had indeed devoted especial attention to diseases of the chest, and besides his general reputation as a diagnostician, his opinion was regarded as of particular value in those diseases. He had early devoted himself to the study of auscultation, and having naturally a very delicate and accurate ear, he acquired great skill in its application. This, added to his great and almost intuitive perception of the value of symptoms, justly entitled him to a reputation, which he maintained throughout life, for especial skill in the diagnosis and management of diseases of the chest.

Upon the institution of the Pathological Society of Philadelphia in 1838, Dr. Gerhard was, by common consent, chosen as its president. This circumstance clearly shows the commanding position which he held among his associates, as a pathological anatomist.

In 1842 he published a work on the diagnosis, pathology, and treatment of diseases of the chest, which was so highly esteemed that it reached a fourth edition in 1860.

In the early part of 1837, he suffered from a very severe attack of typhoid fever, contracted at a time when his constitution was debilitated by his long-continued and arduous labours in the Philadelphia Hospital. In the winter of 1843–4, his health was still further impaired by another attack of illness which left him with a slight loss of power in the lower limb of one side, from which he never entirely recovered, and which he was himself inclined to believe was the consequence of a slight apoplectic effusion. By this last attack, his general health suffered so much, that it was deemed advisable for him to make a trip to Europe, which he accordingly did in the summer of 1844. After an absence of some months he returned to Philadelphia with health much improved, and resumed the active duties of his profession, both as clinical lecturer and private practitioner and teacher. His lectures, which in one form or other were continued by him till near

the close of his life, were delivered partly at the Philadelphia, and partly at the Pennsylvania Hospital, or else in the University building itself, in connection with its dispensary clinic. These clinics were first adopted by the University in the year 1841, and conducted under its auspices, by Dr. Gerhard and Dr. Wm. P. Johnston, in the building of the Medical Institute, but at the expiration of two years were transferred to the University building, and carried on under the immediate supervision of the professors, with the assistance of the gentlemen just mentioned, as we learn from Dr. Carson's complete and elaborate history of that institution.

His connection with the Pennsylvania Hospital, above alluded to, commenced in the year 1846, when he was elected one of its attending physicians. Although Dr. Gerhard returned from Europe, as above mentioned, with much improved health, yet he never altogether recovered his original vigor. Indeed, from this time forward, his contributions to science through the press were comparatively few. This may, in part, have been owing to the fact that his time was much more occupied in private practice, of which he enjoyed a large share. In diseases of the chest particularly, his reputation was such that his advice was much sought after by strangers from different parts of the United States, to whom he was extensively known through the reports of the many students who had attended his lectures. He inspired confidence in his patients, as he did admiration and enthusiasm in his pupils, by his evidently profound and practical acquaintance with disease, and his earnestness and truthfulness in its application. As, in his lectures, he owed nothing to the art of oratory, so in his private practice he owed nothing to commanding address, imposing self-assertion, or other adventitious qualities. His advice was also often sought as consulting physician, and that frequently by his medical brethren, who highly appreciated his nice discrimination, and accuracy of diagnosis, particularly in diseases of the chest; and who, besides, felt fully assured that in inviting his counsels they introduced to their patients one in whose integrity, honour, and freedom from petty selfishness, they could most fully and absolutely rely.

In the year 1850 he married Miss Dobbyn, the daughter of Major Wm. A. Dobbyn, formerly of the British Army, who had come to this country in 1836, and then resided in Philadelphia. By this marriage he had three children, who, together with his widow, still survive him.

To complete the account of his writings, we must now allude to a paper read before this college in 1863, on the subject of "spotted fever." This disease first made its appearance in Philadelphia in the spring of that year. The number of cases were, however, but few, and only in one case had the Doctor an opportunity of witnessing a post-mortem examination. Nevertheless, he made out its distinctive characters with great clearness, particularly in reference to the diagnosis between it and typhoid fever. He congratulates himself, in this paper, that, after having, more than a quarter of a century before, been led to the study of typhus, and thus been able to lay down the distinctive characters separating it from typhoid fever, and which are, "now," he says, "adopted by all the physicians of the French school, and by a large number of English observers," "accident afforded him an occasion for establishing the characters of another variety of febrile disorder." At the time when the Doctor wrote, he was comparatively ignorant of the history of the previous epidemics of this disease, which have since been so thoroughly investigated, and the results laid before us in the exhaustive treatise of our colleague, Dr. A. Stillé.

Nevertheless, in the absence of this knowledge, and with but limited means of observation, Dr. Gerhard was able to make out its characters with great clearness, and assign it to its true place as a blood disease. He preferred continuing to designate it as spotted fever, the spots in his opinion being entirely different from those of typhus, or of the exanthemata. Now, however, since its history and anatomical lesions are so much better understood, it is more generally known as cerebro-spinal meningitis. Here, unlike the subjects formerly investigated by him, he had no opportunity of making post-mortem examinations. Had this been otherwise, he would probably have been among the first to recognize, at least, the very great importance of the cerebro-spinal lesion.

The last paper we shall notice is one on the treatment of continued fevers, from clinical lectures delivered by him at the Pennsylvania Hospital in the winter of 1867–8, and published in the first volume of the reports of that institution in the year 1868. After an admirable account of the treatment of fevers, particularly typhoid and typhus, he alludes to his early investigations establishing the essential distinction between these two, and observes that this distinction is now fully recognized in France, where true typhus had of late years prevailed to a large extent, particularly since the Crimean war, and, of course, had afforded opportunities which had not previously existed there, for the examination of the subject. What we wish, however, to notice particularly here, are a few remarks which he makes upon the pathology of fevers. "We find," he says, "in every variety of fever, that the lesions which exist after death are insufficient to account for the symptoms." Thus, in typhoid fever, although the characteristic intestinal lesions exist in every case, and may attract attention from the local symptoms to which they give rise, "yet they do not constitute the disease, for we find that the only evidence of real disorder consists in the altered condition of the blood." The general group of symptoms by which the disease is ushered in, he views as associated with a general disorder of the system, which gives rise to, instead of being produced by, the local structural changes found after death. Besides, he says that in typhus "there is no local lesion of importance," and that "with the exception of the blood disease . . . it is impossible to arrive at the cause of the disease by reference to any particular physical change." In intermittents and remittents, he says, the alteration of the blood becomes still more obvious and tangible. He concludes by expressing the opinion, that, whereas, at one time, fevers had been studied more particularly in reference to their symptoms, the ardent pursuit of pathological anatomy, of late years, "had induced physicians to pay too much attention to structural changes," and to erect into a cause, what in fact is the consequence of a general disorder, with which the symptoms are associated, and which constitutes the starting-point of the disease. Similar views are expressed in reference to some other diseases, particularly phthisis. The above extracts form a fitting conclusion to the cursory sketch which I have given you of Dr. Gerhard's medical career. They show us, that, although trained in the school of pathological anatomy, and ardently devoted to its pursuit, his practical insight into disease was too profound to permit him to so exaggerate the value of these local lesions, as to see in them the starting-point and exclusive cause of all the morbid phenomena; notwithstanding that this view was in opposition to a good deal of his early training, as well as to the general tendency of the pursuit to which he had been most especially devoted.

Shortly after the period at which we have now arrived, Dr. Gerhard resigned his position as attending physician to the Pennsylvania Hospital, and from that time gradually retired from the active duties of his profession. In the summer of 1868 he made a short visit to Europe, where he had the pleasure of renewing his intercourse with a few of his early associates in Paris, particularly M Louis, who was then still living at a very advanced age. Shortly after his return, in December, 1868, he met with an accident, by which his right ankle was fractured, and from the consequences of which he nearly lost his life. He recovered, however, and was able, for a time, to resume his professional visits, but the gradual failure of his health incapacitated him more and more for active duty. Finally, on the 28th of April, 1872, he died from an attack of apoplexy, of which he had had premonitions for some months.

In looking back, over the life of Dr. Gerhard, one is particularly struck with the uniform steadiness with which he devoted himself to clinical teaching, from a very early period of his career, until near the close of his life. For this duty, his natural endowments and early training especially qualified him, and he knew it. But, at the same time, his modest, or rather, I should say, his discriminating estimate of his own powers, led him to doubt his fitness to assume the position of a general lecturer. He, therefore, never allowed himself to become a candidate for any of the higher honours of the profession. Unallured by false glare, he never permitted himself to be swerved for a moment from the quiet pursuit of what he believed to be his special allotment. The same just discrimination characterized his estimate of others. Conceding to all, what was justly their due, he commanded the respect and confidence of all. Throughout his life he was never involved in controversy. Charitable to the failings of others, even when suffering under injustice or harsh judgment, he did not dwell upon his grievances; and, if occasionally he did refer to them, he indulged in no harsh or violent expressions of animosity towards the authors of them. Placid in temper, kind and generous in his feelings, genial and gentle in his manners, he won the affection as well as the respect of his associates, and has left a void which will be long felt in the circle of his intimate friends.

# INDEX.


Abortion, case of, 211
Abscess in neck, 463
Acupressure of femoral artery, 218
Allen, apparatus for generating vapour of muriate of ammonia, 363
Amputation, Pirogoff's, 92
Amputations, numerous, in same subject, 261
Amyl, nitrite of, 366
Anæmic murmurs, 394
Anæsthesia, 144, 181
  by acetic ether, 339
Aneurism, 137
  thoracic, 269
Angina, ulcero-membranous, 331
Anosmia, 362
Appendix vermiformis, peritonitis from perforation of, 181.
Artery, femoral, acupressure of, 218
Ashhurst, J., acupressure of femoral artery, 218
  aneurism, 137
  carbuncle treated by pressure, 281
  dislocations in children, 352
  excision of hip, 393
    knee, 413
  extroversion of bladder, 466
  hypodermic use of ergotine, 461
  iodoform in venereal ulcers, 462
  lacerations produced by lion, 414
  mammary cancer, 143
  prolapsus of rectum, 415
  strangulated hernia, 175
Ashhurst, S., foreign body in thigh, 453
Astragalus, excision of, 368
Atlee, W. F., abscess in neck, 463
  Cæsarean section, 315
  cerebro-spinal meningitis, 65
  encysted tumour of neck, 398
  ovariotomy, 386
  placenta prævia, 416
  removal of uterus, 387
  solid galactocele, 465
  stone in female, 368
  strangulated hernia, 292
  thoracic aneurism, 269
  thrombosis, 262

Bache, tracheotomy in croup, 278, 324
Beesley, Dr., memoir of, 235
  memoir of Dr. Wm. Darrach, 163
Bladder, extroversion of, 385, 466
Bone, regeneration of, 153
Brain, abscess of, 179
Brinton, gunshot wound of lung, 342
Bromide of lithium, 350
  potassium in sickness of pregnancy, 217
Bromides, ulceration from use of, 347
Bronchitis, asthmatic, chloral in, 324
Building committee, report of, 117.

Cæsarean section, 315
Calcaneum, excision of, 368
Calculus, 63
  in female, 368
Cancer of colon, 150
  hydrothorax from, 273
  mammary, 143
Carbuncle, 281
Cataract, 55
Cerebral disease, trephining in, 356
Chloral in asthmatic bronchitis, 324
  chloroform, and ether, hypodermic use of, 316
Church, Dr., memoir of, 450
Colon, cancer of, 150
Corse, report on meteorology, etc., for 1864, 146
Croup, tracheotomy in, 278
Crystalline lens, ossification of, 65

Da Costa, remarks on Dr. Wood's case of leucinosis, 202
  ulcero-membranous angina, 331
Darrach, Dr. W., memoir of, 163
Deformities after hip-disease, 185
Dislocation of atlas on axis, 288
  forearm backwards, 289
Dislocations in children, 352
Downs, punctured fracture of skull, 388
Drainage probe, 217
Duffield, Dr., memoir of, 449
Dunglison, Dr. R., memoir of, 294

Epidemics, reports on; *see* Meteorology
Ergotine, hypodermic use of, 454, 461
Erysipelas, sulphite of soda in, 136
Esmarch's apparatus, 468
Ether, hypodermic use of, 316
  inhaler for, 261
  acetic, as an anæsthetic, 339

Etherization ; *see* Anæsthesia
Excision of astragalus and calcaneum, 368
hip-joint, 393
knee-joint, 413
splint for, 341
lower jaw, 340
Extroversion of bladder, 385, 466

Fever, spotted (*see also* Meningitis), 41, 49, 64, 101, 106, 111, 134
typhoid, peritonitis in, without perforation, 157
Fibro-nuclear tumour of uterus, 279
Forbes, dislocation of atlas on axis, 289
forearm backwards, 288
excision of lower jaw, 340
numerous amputations in same subject, 261
Foreign body in thigh, 453
Fracture, growth of nails after, 466
of humerus, splint for, 134
intra-capsular, of cervix femoris, 317
of skull, 219
compound, 329
punctured, 388

Galactocele, solid, 465
Gangrene, amputations for, 261
Gerhard, Dr. W. W., memoir of, 473
memoir of Dr. Pennock, 245
spotted fever, 41
Getchell, monstrosity, 189
vaginal speculum, 207
Gilbert, D., spotted fever, 111, 134
stone cases, 63
Goodell, diagnosis of presentation in labour, 263
trephining in cerebral disease, 361
Gross, S. D., memoir of Dr. Dunglison, 294
Gunshot wound of lung, 342

Hall, peritonitis from perforation of appendix vermiformis, 181
Hamilton, anosmia, 362
pyæmia, 182
Hartshorne, H., heart disease in the army, 59
memoir of Dr. R. P. Thomas, 159
spotted fever, 64
Hays, I., cataract, 55
Heart disease in the army, 59
Hemorrhage caused by sequestrum, 135
Hernia, strangulated, 175, 178, 292
Hewson, compound fracture of skull, 329
cystic testis, 52
Pirogoff's amputation, 92
sulphite of soda in erysipelas, 136
Hip-disease, deformities after, 185
splint for, 206
Hip-joint, excision of, 393
Hodge, H. Lenox, deformities after hip-disease, 185
drainage probe, 217
Humerus, splint for fractured, 134
Hunt, hemorrhage caused by sequestrum, 135
ossification of crystalline lens, 65
regeneration of bone, 153
tumour of tongue, 153
Hutchinson, diagnosis of anæmic murmurs, 394
pyæmia following pelvic cellulitis, 382
simulating rheumatism, 320
Hydrocyanic acid, suicide by, 290
Hydrothorax from cancer, 273

Inhaler for ether, 261
Iodoform in venereal ulcers, 462

Jaw, lower, excision of, 340
Jewell, reports on meteorology, etc., 5, 67
spotted fever, 101

Keating, hypodermic use of ergotine, 454
Keen, Esmarch's apparatus, 468
Kirkbride, memoir of Dr. Pepper, 168
Knee-joint, excision of, 413
splint for, 340

Labour, diagnosis of presentation in, 263
Lamb, spotted fever, 49
Laryngitis, chronic, tracheotomy in, 335
Lens, crystalline, ossification of, 65
Leucinosis, 191
Levick, abscess of brain, 179
spotted fever, 106
Lion, lacerations produced by, 414
Littell, memoir of Dr. Beesley, 235
Dr. West, 247
Lung, gunshot wound of, 342

Maury, extroversion of bladder, 385
Meigs, J. F., memoir of Dr. C. D. Meigs, 417
Meningitis, 362
cerebro-spinal (*see also* Spotted fever), 65, 104, 113, 127
Meteorology and epidemics, reports on, 5, 67, 146, 212, 228, 264, 325, 369, 399, 456, 469
Mitchell, bromide of lithium, 350
effects of chloral, chloroform, and ether, hypodermically employed, 316
growth of nails in cerebral paralysis, 364
neuralgia and purpura, 282
ulceration from use of bromides, 347
Monstrosity, case of, 189
Morris, C., chloral in asthmatic bronchitis, 324

Morris, J. C., case of Dr. Pennock, 222
resembling phlegmasia alba in male, 264
fibro-nuclear tumour of uterus, 279
fracture of skull, 219
Morton, excision of astragalus and calcaneum, 368

Nails, growth of, after fractures, 466
in paralysis, 364
Nebinger, case of abortion, 211
Neck, abscess in, 463
encysted tumour of, 398
Neill, memoir of Dr. Church, 450
Dr. Duffield, 449
Neuralgia, 282
Norris, I., paraplegia, 204

Obstetric case, portable, 280
Ovariotomy, 386
attempted, 392

Packard, anæsthesia, 144, 181
attempted ovariotomy, 392
bromide of potassium in sickness of pregnancy, 217
dislocations in children, 353
growth of nails after fractures, 466
intra-scapular fracture of cervix femoris, 317
splint for excision of knee, 341
fractured humerus, 134
hip-disease, 206
strangulated hernia, 178
Par vagum, effects of section of, 317
Paralysis, growth of nails in, 364
Paraplegia, case of, 204
Pennock, Dr. C. W., case of the late, 222
memoir of, 245
Pepper, Dr. W. (*Primus*), memoir of, 168
(*Secundus*), hydrothorax from cancer, 273
memoir of Dr. E. Rhoads, 403
sclerosis, 379
section of par vagum, 319
Stöhrer's battery, 363
tracheotomy in chronic laryngitis, 335
trephining in cerebral disease, 356
Peritonitis from perforation of appendix vermiformis, 181
in typhoid fever, without perforation, 157
Pessary for procidentia uteri, 463
Phlegmasia alba, case resembling, in male, 264
Pirogoff's amputation, 92
Placenta prævia, 416
Procidentia uteri, pessary for, 463
Purpura, 282
Pyæmia, 182
following pelvic cellulitis, 382
simulating rheumatism, 320

Rattlesnake, bite of, 263
Rectum, prolapsus of, 415
Rhoads, Dr. E., memoir of, 403
Sclerosis, case of, 379
Sequestrum, hemorrhage caused by, 135
Shapleigh, bite of rattlesnake, 263
suicide by hydrocyanic acid, 290, 291
Skull, fracture of, 219
compound, 329
punctured, 388
Smith, A. H., inhaler for ether, 261
portable obstetric case, 280
Speculum, vaginal, 207
Spooner, pessary for procidentia uteri, 463
tænia nana, 416
Spotted fever; *see* Fever
Stewardson, memoir of Dr. W. W. Gerhard, 473
Stillé, cancer of colon, 150
cerebro-spinal meningitis, 104, 113, 127
meningitis, 362
peritonitis in typhoid fever, 157
Stöhrer's battery, 363
Stone; *see* Calculus
Suicide by hydrocyanic acid, 290
Sulphite of soda in erysipelas, 136

Tænia nana, 416
Testis, cystic, 52
Thomas, Dr. R. P., memoir of, 159
Thrombosis, case of, 262
Tongue, tumour of, 153
Tracheotomy in chronic laryngitis, 335
in croup, 278
Trephining in cerebral disease, 356
Tutt, Dr. C. P., memoir of, 207

Ulceration from use of bromides, 347
Ulcero-membranous angina, 331
Uterus, fibro-nuclear tumour of, 279
pessary for procidentia of, 463
removal of, 387

Wells, memoir of Dr. C. P. Tutt, 207
reports on meteorology, etc., 212, 228, 265, 325, 369, 399, 456, 469
West, Dr. F., memoir of, 247
Wood, H. C., acetic ether as an anæsthetic, 339
leucinosis, 190
nitrite of amyl, 366
section of par vagum, 317

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